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A Group-Discussion Syllabus of Psychology

TOPICS, QUESTIONS AND REFERENCES
FOR AN INTRODUCTORY
COLLEGE COURSE

DANIEL BELL LEARY, PH. D.
Professor of Psychology
University of Buffalo



COLLEGE OF ARTS AND SCIENCES
University of Buffalo
BUFFALO, NEW YORK
1920

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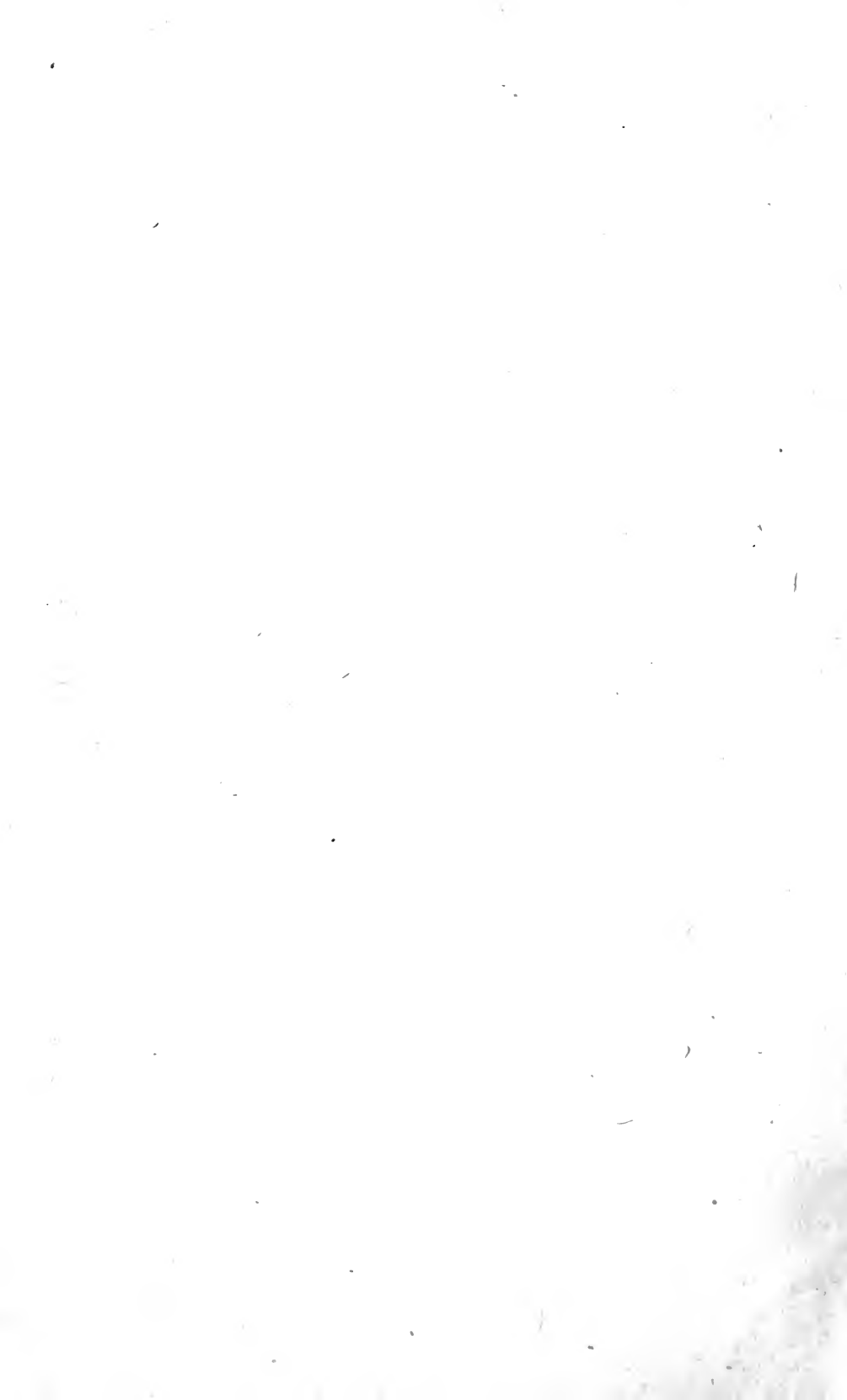
PREFACE

This introductory college course in psychology, sketched out originally through the medium of weekly mimeographed sheets as the class progressed from topic to topic, is intended to serve several purposes. Briefly, its purposes are as follows: to do away with the text book method and the consequent almost inevitable emphasis of one point of view and dependence upon it; to make necessary, not merely to encourage, wide reading on every topic, which automatically requires thinking, comparison and selection on the part of the student; to offer a sufficiently broad basis for both a more advanced course in general psychology, as well as a course in educational psychology; finally, to apply, in some little measure, at least, the methods and the conclusions of psychology, in the particular instance of the study of its own field.

No text was used; instead, references to opposing points of view were indicated for each topic, and the class hour was devoted to a discussion of these, and the process of sifting from them that which was in accord with the general purpose of the class, the fundamental principles obtained from the first few discussions, and the general point of view of the instructor. Lectures and 'recitations' were constantly subordinated to the class discussion, to which each member of the group was expected to contribute his share.

References on each topic have been indicated at the bottom of each question sheet simply by the name of the author, in the belief, substantiated by experience, that the process of 'finding a reference', and selecting the pertinent material from a complete book or article is more conducive to acquiring familiarity both with a given book as well as an appreciation of the relation of different topics to one another in a given book and, finally, to a quicker and a more intimate acquaintance with the bibliography as a whole. The class understood that the references listed in this way were suggestive only, and that other books, both in the bibliography as well as some not listed at all were perhaps equally valuable. Readings in languages other than English, and magazine articles constitute such extra bibliographical material, both of which though not listed, were accessible to the class. References are also divided into two groups, I and II, which contain, respectively, the simpler, and the more advanced readings on a given point. Where a given author has several references listed under his name, each is indicated by a number in parenthesis, i. e., (1) and (2) indicating respectively the first and the second titles under any given name, and so on.

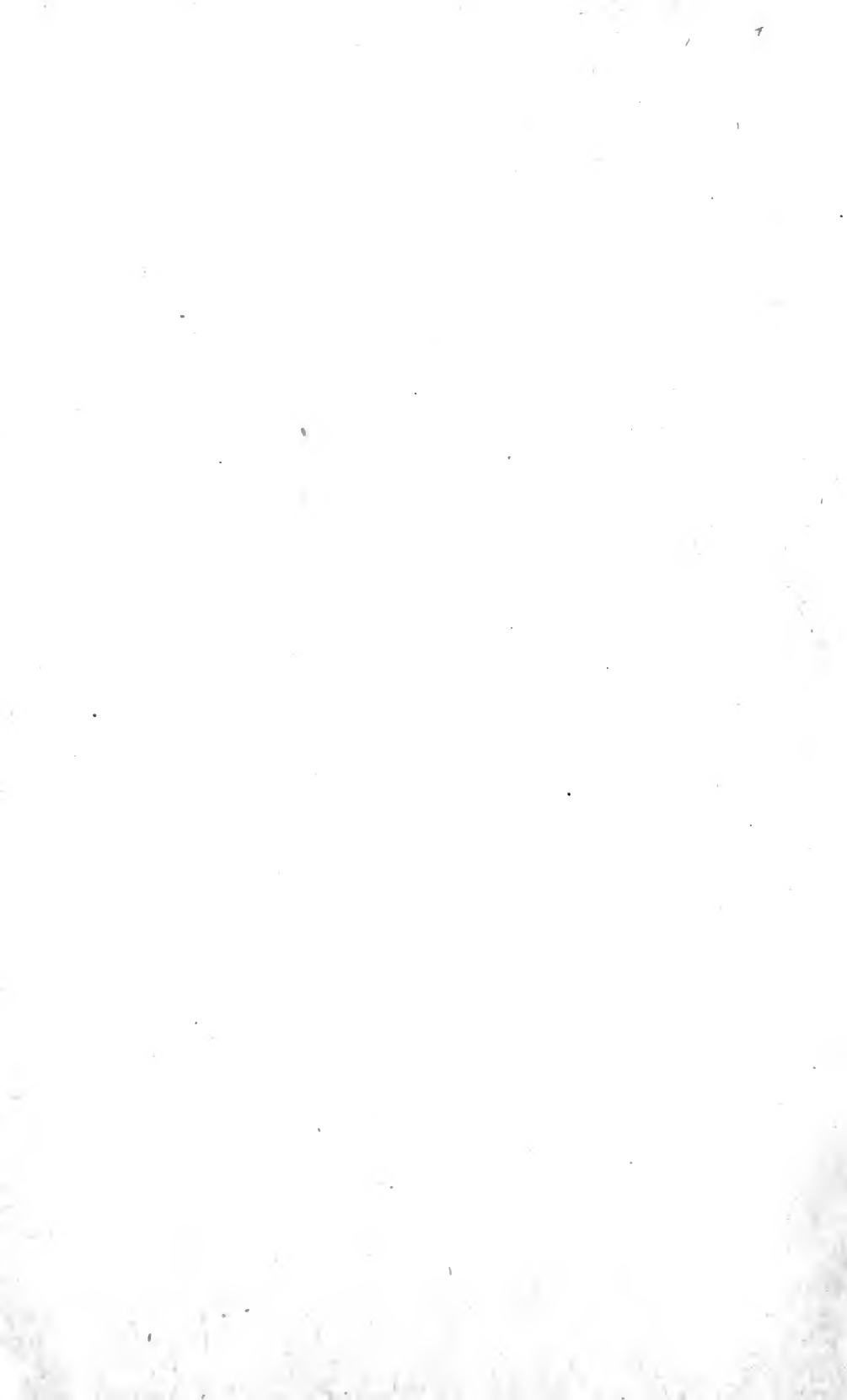
The exact point of view adopted, as shown by both the selection and arrangement of topics, as well as by the treatment given them, is not as severely objective as some exponents of Behaviorism would perhaps demand, but the course is, as was stated above, introductory to the subject, and the attainment and constant preservation of an absolutely objective point of view, even if desirable, was early seen to be inexpedient. With such a foundation as here given, with the constant isolation and comparison of the objective and other elements



in a given situation, far greater stress can be laid on the elements of 'situation-response-bond' in following courses.

The course is planned to run for a college year, three hours a week. Occasional experiments may be given, both in the laboratory, with simple apparatus, and in the class room, with the emphasis placed on method rather than the attainment by untrained individuals of exact results at the beginning of their study of the subject. The course can, however, be given in less time, by requiring less detail in the discussion of the questions.

DANIEL BELL LEARY.



LIST OF TOPICS

- I. The Field of Psychology
- II. The Psycho-Physical Organism
- III. The Structural Basis of Mental Functions
- IV. The Relation of the Mental and the Physical
- V. Some Concrete Examples of Relationship
- VI. Psychological Methods
- VII. Definitions and Sub-Divisions of Psychology
- VIII. Some Concrete Problems of Psychology
- IX. Attention; I.
- X. Attention; II.
- XI. Sensation; I.
- XII. Sensation; II.
- XIII. Organic, Kinaesthetic and Cutaneous Sensations
- XIV. Olfactory and Gustatory Sensations
- XV. Auditory and Visual Sensations
- XVI. Perception; I.
- XVII. Perception; II.
- XVIII. Memory; I.
- XIX. Memory; II.
- XX. Imagination
- XXI. Association
- XXII. Thinking; I
- XXIII. Thinking; II.
- XXIV. Thinking; III.
- XXV. Affection and Feeling; I.
- XXVI. Affection and Feeling; II.
- XXVII. The Emotions; I.
- XXVIII. The Emotions; II.
- XXIX. Types of Behavior
- XXX. The Will
- XXXI. The Self
- XXXII. Some General Considerations



BIBLIOGRAPHY

(References are grouped under the separate letters of the alphabet, but within each such group the arrangement is not strictly alphabetical, but roughly in order of use and convenience. The simpler, the more concrete, and those more frequently referred to are listed first, the more abstract the more difficult, and those cited less frequently are nearer the end of each alphabetical group.)

Angell J R	Psychology
Arnold F	Chapters from Modern Psychology
Anderson B M	Attention and Interest
Ames E S	Social Value
Adams H F	The Psychology of Religious Experience
Adler A	Advertising and Its Mental Laws
Abbott D P	The Neurotic Constitution
Breese B B	Behind the Scenes with the Mediums
Baldwin J M	Psychology
	The Story of the Mind
	Dictionary of Philosophy and Psychology
	The Individual and Society
	Social and Ethical Interpretations in Mental Development
	History of Psychology
	Mental Development in the Child and in the Race
Binet A	Psychology of Reasoning
	Alterations of Personality
Boas F	The Mind of Primitive Man
Brinton D G	The Basis of Social Relations
Bagley W C	The Educative Process
Barr M W	Mental Defectives, Their History, Treatment and Training
Binet and Simon	Mentally Defective Children
	A Method of Measuring the Development of the Intelligence of Young Children
Brill A A	Psychoanalysis
Burr C B	Psychology and Mental Disease
Bloomfield M	Readings in Vocational Guidance
Bromwell J M	Hypnotism
Brett G S	A History of Psychology
Cooley C H	Human Nature and the Social Order
	Social Process
	Social Organization
Colvin and Bagley	Human Behavior
Colvin S S	The Learning Process
Claparede E	Experimental Pedagogy and the Psychology of the Child
Coe G A	The Religion of a Mature Mind
	The Spiritual Life
Calkins M W	Introduction to Psychology
Cannon W B	Bodily Changes in Pain, Hunger, Fear and Rage
Crile C W	Origin and Nature of the Emotions
Conklin E G	Heredity and Environment
Crampton H E	Doctrine of Evolution
Coover J E	Experiments in Psychical Research
Crawford W J	The Reality of Psychic Phenomena
Dunlap K	A System of Psychology
	An Outline of Psychobiology

Dewey J	How We Think
Donaldson H H	The Growth of the Brain
Davenport F M	Primitive Traits in Religious Revivals
Durkheim E	Elementary Forms of the Religious Life
Dana C L	Text-Book of Nervous Diseases and Psychiatry
Dessoir M	Outlines of the History of Psychology
Darwin C	The Expression of the Emotions in Man and Animals
Davenport C E	Heredity in Its Relation to Eugenics
Driesch H	The History and Theory of Vitalism
	The Problem of Individuality
Drever J	Instinct in Man
Ebbinghaus H	Psychology, an Elementary Text-Book
Edinger L	The Anatomy of the Central Nervous System of Man
Ellis H	Studies in the Psychology of Sex
Ellwood C A	Sociology in Its Psychological Aspects
Forel A	The Senses of Insects
Freud S	The Interpretation of Dreams
	Psychopathology of Everyday Life
Franz S I	Handbook of Mental Examination Methods
Freeman F N	The Psychology of the Common Branches
	Experimental Education
Fisk E W	An Elementary Study of the Brain
Gross H	Criminal Psychology
Groos K	The Play of Man
	The Play of Animals
Gordon K	Esthetics
Goddard H H	Feeble-Mindedness, Its Causes and Consequences
	The Psychology of the Normal and the Sub-Normal
Guthrie L B	Functional Nervous Disorders in Childhood
Gilbreth F S	Motion Study
	Psychology of Management
Goldmark J	Fatigue and Efficiency
Gowin E B	The Executive and His Control of Men
Galton F	Inquiries into the Human Faculties
Greenwood M	Physiology of the Special Senses
Höfding H	Outlines of Psychology
Herrick C J	Introduction to Neurology
Hall G S	Youth
	Adolescence
	Founders of Modern Psychology
Hildebrand A	The Problems of Form in Painting and Sculpture
Holmes S J	The Evolution of Animal Intelligence
	Studies in Animal Behavior
Hart B	The Psychology of Insanity
Holmes A	Backward Children
Hollingsworth H L	Vocational Psychology
	Advertising and Selling
Hobhouse L T	Mind in Evolution
	Development and Purpose
Holt E B	Concept of Consciousness
	The Freudian Wish
Henderson L J	The Fitness of the Environment
	The Order of Nature
Haldane J S	Mechanism, Life and Personality
Herbert S H	Physiology and Psychology of Sex
Hunter W S	General Psychology
Hirn Y	Origins of Art
Hyslop J H	Science and a Future Life
James W	The Principles of Psychology
	Psychology, Briefer Course
	Talks to Teachers
	Varieties of Religious Experience
	Does Consciousness Exist
Judd C H	Psychology, General Introduction
	Laboratory Equipment for Psychological Experiments

	Psychology of High-School Subjects
	Genetic Psychology for Teachers
Jennings H S	Behavior of the Lower Organisms
Janet P	The Major Symptoms of Hysteria
Jung C G	Psycho-analysis
Jastrow J	Character and Temperament
	Qualities of Men
	Fact and Fable in Psychology
	The Sub-Conscious
Kölpe O	Outlines of Psychology
Kirkpatrick E A	The Individual in the Making
	Fundamentals of Child Study
	Genetic Psychology
King I	The Development of Religion
Kelynack T N	Defective Children
Klemm O	History of Psychology
Ladd G T	Psychology, Descriptive and Explanatory
Langfeld and Allport	An Elementary Laboratory Course in Psychology
Ladd and Woodworth	The Elements of Physiological Psychology
Lickley J D	The Nervous System
Loeb J	Comparative Physiology of the Brain and Comparative Psychology
	The Organism as a Whole
	The Mechanistic Conception of Life
Le Bon G	Psychology of Peoples
	The Crowd
	The Psychology of Revolution
Lee J	Play in Education
Leuba J H	Psychological Study of Religion
Lapage C P	Feeble-mindedness in Children of School Age
Link H C	Employment Psychology
Leary D B	A Group-Discussion Syllabus of Sociology
Lodge O	The Survival of Man
McDougal W	Psychology, the Study of Behavior
	Social Psychology
	Primer of Physiological Psychology
	Body and Mind
Münsterberg H	Psychology, General and Applied
	Psychology and the Teacher
	Psychotherapy
	Psychology and Industrial Efficiency
	Business Psychology
	Psychology and Social Sanity
	On the Witness Stand
Miller I E	Psychology of Thinking
Mvers C S	Text-Book of Experimental Psychology
M'Kendrick and Snodgrass	The Physiology of the Senses
Meumann E	Psychology of Learning
Major D R	First Steps in Mental Growth
Montessori M	Pedagogical Anthropology
McComas H C	Psychology of Religious Sects
Morgan L	Instinct and Experience
	Habit and Instinct
	Animal Life and Intelligence
	Introduction to Comparative Psychology
Moll A	Hypnotism
	The Sexual Life of the Child
Moore B	Origin and Nature of Life
Meyer M	Fundamental Laws of Human Behavior
Marshall H R	Consciousness
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Pyle W H

Parmelee M

Quackenbos J D

Royce J

Ribot T

Ross E A

Rusk R R

Rachford B K

Rand D

Russell B

Rowe S H

Stout G F

Sully J

Sanford E C

Seashore C E

Stratton G M

Sherrington C S

Stiles P G

Shand A F

Sandiford P

Schulze R

Starch D

Shinn M

Stoner W

Starbuck E D

Smith E M

Sherlock E B

Shuttleworth and Potts

Sidis and Goodhart

Scott W D

Sidis B

Stern W

Sesson E O

Swift E J

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Sidwick H

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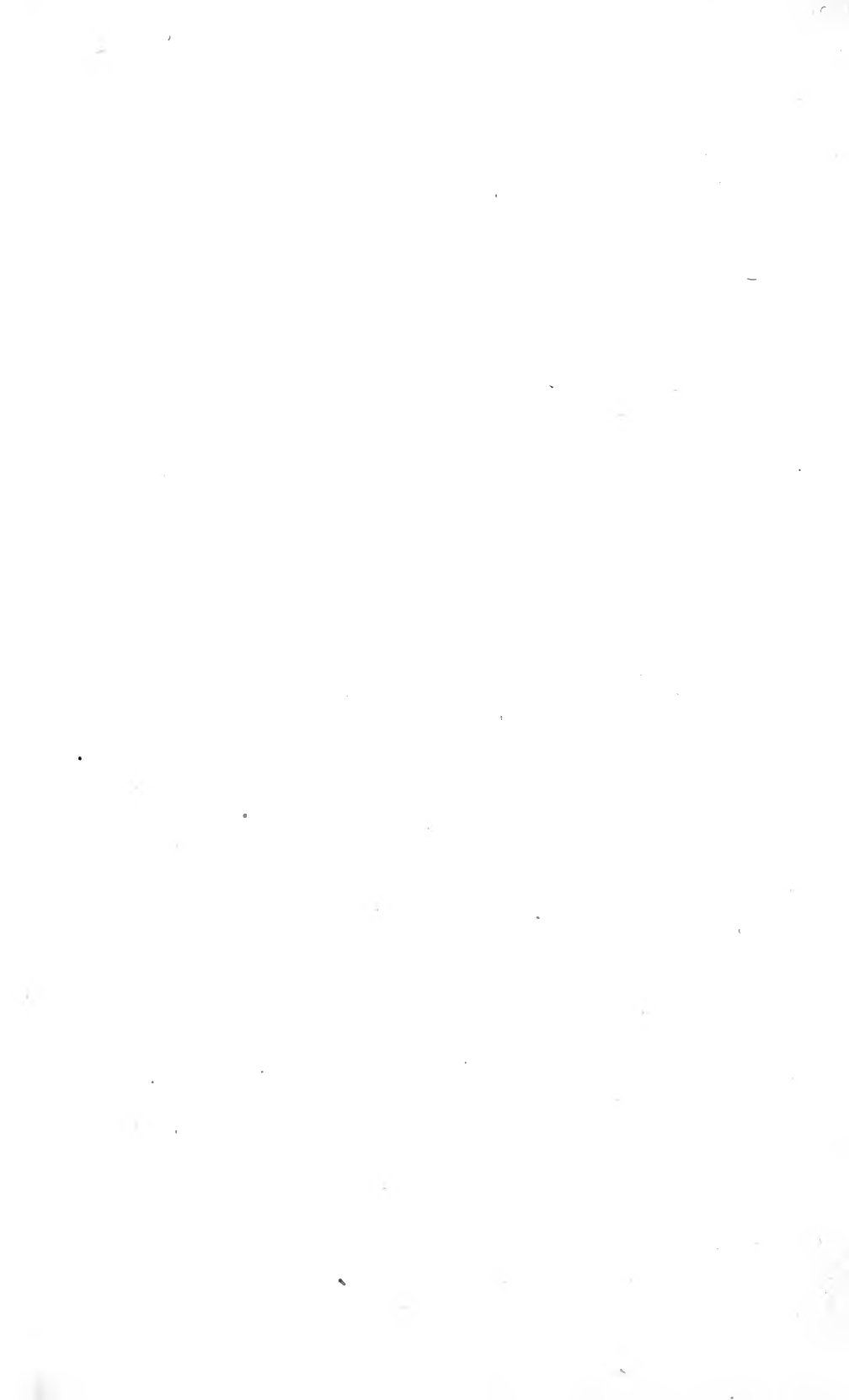
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Instincts of the Herd in Peace and War



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_____	Human Nature in Politics
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Yerkes R M	Introduction to Psychology
Yoakum and Yerkes	Army Mental Tests
Yerkes, Bridges and Hardwick	A Point Scale for Measuring Mental Ability

(All of the above books will be found either at the College or in the Grosvenor Reference Library. Dr. Shearer, the Librarian of the Grosvenor, requested a copy of this Bibliography before publication and, in a splendid spirit of co-operation volunteered to obtain all titles not already on his shelves.)

TO THE STUDENT

Each of the question sheets in this course will contain a number of references, divided into two groups, I and II, the former listing the more simple and typical references, the latter the more difficult and general. Only the name of the author is given on the individual sheets, the titles will be found in the Bibliography. It is the task of the student to locate, by means of table of contents or index, the particular portion of each book which applies to the topic he is studying at any given time. Each student is required to read at least three references for each sheet of questions, and to make note of such readings in a note-book which will be handed in to the instructor for examination and credit at the end of each quarter. The note-book is to contain the title, author, the exact pages read, an estimation of its value in terms of the letters A, B, C, D, E,—where the letter A stands for the highest rank, and whatever comments, criticism or suggestions the student cares to make with reference to the book in question and, finally, the date when the reading was done.

It is strongly urged, though not required, that after the references for a given topic have been read, students form themselves into small groups of three or four and discuss, in the light of their respective readings, the questions of the topic sheet to which they apply. This will best prepare the student for the class discussion, which it is the purpose of the whole method to foster. Lectures and recitations will be entirely subordinated to the group discussion, to which each student will be expected to contribute his share.

When a given author has several books listed under his name in the Bibliography, reference will be made by the name of the author followed by a figure (1), (2), etc., indicating whether the first, or the second, etc., of the books is meant.

Current issues of psychological magazines will be found in the library, and articles in them applying to any given topic may be credited in the list of readings. Notation of them is to be made in the same way as for the books.

I. The Field of Psychology

1. What is experience? Is there a more fundamental term? Are there any synonyms?

2. What is science? What is the relationship of Science and Experience? Which is more inclusive? Is psychology a part of science? Does psychology deal with the same things as science merely from a different point of view?

3. What is the basis of the inclusion of certain experiences into the domain of this or that science? That is, how is the subject-matter of a given science determined? Has purpose, the history of the science, accident, etc., anything to do with this?

4. What is the difference between subject-matter and method? Can the one be separated from the other? Can different methods be used with the same subject matter and vice-versa?

5. What is the method of science,—of psychology? Compare the table of contents of Watson and Stout, of Ward and Titchener. What differences of subject-matter and method do they indicate? What words do you find in Stout that are not in Watson? Are they treating of the same thing,—psychology?

6. What do you understand by the following terms: objective, subjective, apriori, theoretic, scientific, mental, non-mental? Describe your fountain pen from an objective of view, a scientific point of view, a subjective point of view. The same for music, a dream, the subject of ghosts.

7. What do you understand by the following terms: soul, mind, self, consciousness, behavior, conduct, personality? Show any connection between the terms of Question 6 and those just given. Are you in a position to give a final discriminating answer to these two questions?

8. To what other fields of thought do the questions of psychology lead us? Is it necessary for psychology, as such, to give a final and unqualified answer to every question which it finds? From what other fields of research does psychology receive material and aid? To what fields does it furnish material and aid? Be detailed especially with biology, physiology, physics and chemistry.

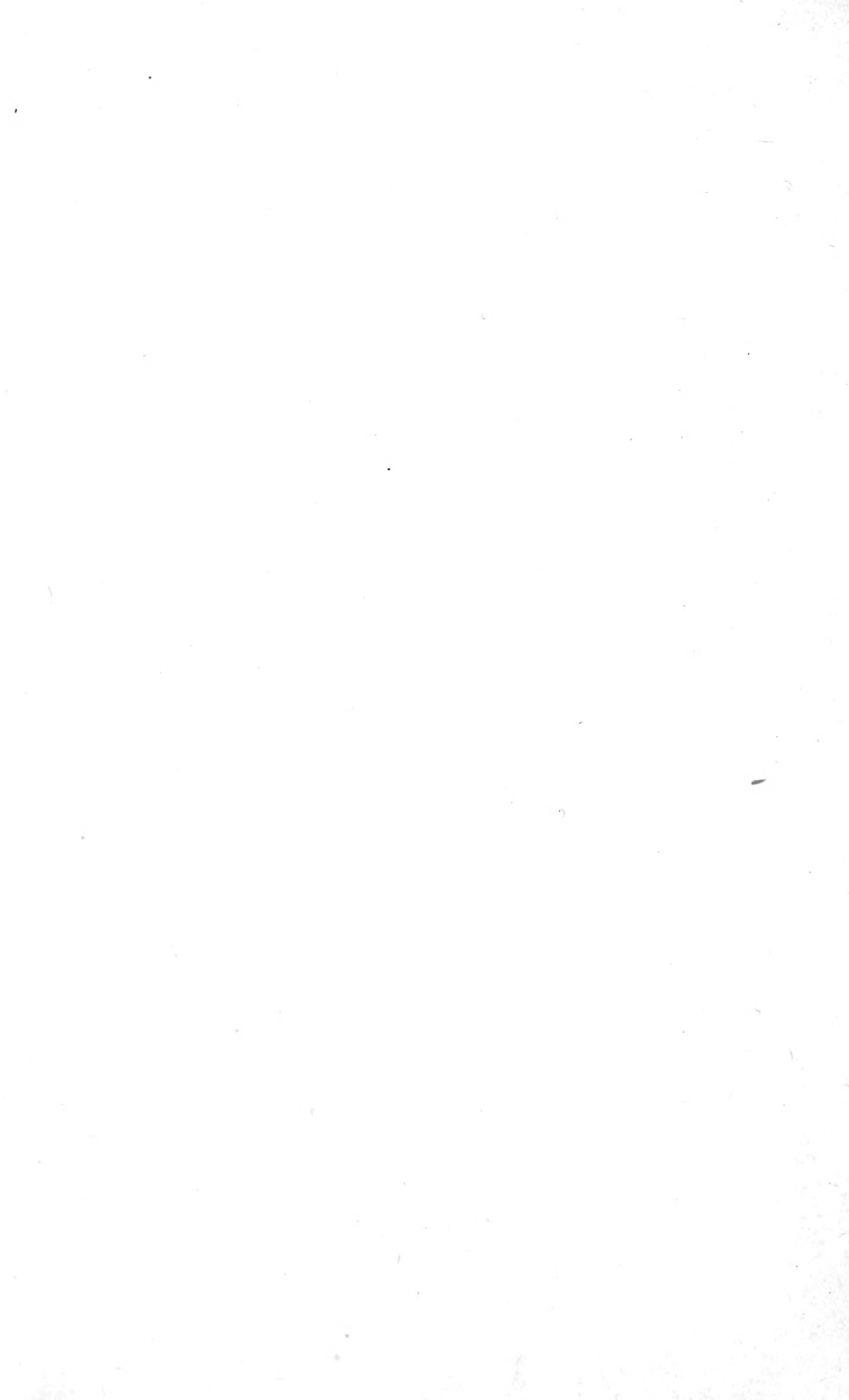
9. What sub-divisions of the whole field of psychology can you name and tentatively describe? What different methods?

References.

I. Angell (1); Baldwin (1); Breese; Colvin and Bagley; Calkins; Höffding; Hunter; James (1) (2); Judd (1); Stout (2); Ogden; Warren; Münsterberg (1); Woodworth.

II. Sidgwick; Ladd; McDougal (1); Marshall (2); Parmalee; Royce; Stout (1) (3); Thomson; Watson (1) (2); Wundt (1); Ward, J.; Yerkes.





II. The Psycho-Physical Organism.

1. As you take stock of your experience what 'things' do you find entering into it? Where do you draw the line between 'yourself' and the world around you? Within the circle of your self what distinctions can you make? Do you find a definite 'thing' called body, and another called mind or 'self' in a more intimate sense?

2. Can you further sub-divide the body, and find parts or elements that are comparatively separate in their functioning and structure? What are these parts, their general nature and their relationship to both the body as a whole and the self in the more intimate sense?

3. If you were to examine the structure of one of these bodily parts, what further elements would you find, and how far could you carry the process? What has been the general evolutionary history of these parts? What is their relationship to still more elementary things? Would a study of their structure and composition lead you to chemistry and physics? Is this the province of psychology?

4. In the evolution of physical organs and their concomitant interaction and organized functioning has the other aspect of the human organism (self in the intimate sense) also undergone an evolution,—or has there been a sudden creation and 'insertion' of what we call mind or consciousness? What significance would the different answers to this have for the study of psychology?

5. What is experience from the point of view here developed? Do lower organisms have 'experiences'? How low? How do you judge? What are 'vital processes' or functions, and how do they differ from 'mental processes' or functions? Give examples of each. What of stimulation, adjustment, response in this connection?

6. Is it possible in answering the above questions always to draw an exact and sharp line between the things distinguished? Is it a question of emphasis and proportion? Always?

7. What is the structural basis for the vital functions of an organism? For the mental functions? Are mental functions possible apart from physical structures? Or organs? What can we say on this basis of the mental life of lower organisms? Is this, again, the field of psychology?

8. Are the mental functions of a dog and a man different? Of a child and the man whom the child becomes? What do we judge of the structural bases in these cases? What are the implications in the latter case? What are they for the different mental functions of, say, an idiot and a genius?

References.

I. Angell (1); Baldwin (1); Breese; Calkins, Höffding; Hunter; Thorndike (4) (6); Woodworth; Titchener (1). See Warren and Thorndike (1) (2) for illustrations.

II. Burr; Cannon; Crampton; Donaldson; Fisk; Haldane; Stoerring; Moore, B.; Osborn; Wilson; Warner (1); Morgan (1) (2) (3) (4).

III. The Structural Basis of Mental Functions.

1. What are the respective functions of receptor cells (or receptor organs), neurons or nerve cells, and effector cells? What are their respective locations? What is a 'nervous arc' and its function? The general structure of a neuron? Types? Do the neurons increase in size or number after birth?

2. What is the physical relation of the several neurons which go to make up a chain or nervous arc? What is a synapse and its significance? What are probably the respective functions of the cell of the neuron and its arborization and collaterals?

3. Describe the organization of the neurons in systems, i. e., the cerebro-spinal system (brain and spinal cord), the autonomic system. Give further detail of the cortex, afferent and efferent nerves, gray matter and white matter, cerebrum, cerebellum, medulla, association fibres, association and projection areas, (sympathetic) ganglia, plexus.

4. What are the respective functions of the autonomic and the cerebro-spinal systems? What of vital and mental functioning? What is their co-operation, and interaction? What types of muscles are associated with the action of each? What of the glands, their control and action?

5. What is the nature of the nerve impulse? What does variation in intensity and mode mean? What difference of opinion in this matter? What are the several specific characteristics or abilities of the nerve substance and to what do they correspond in the experience or behavior of the individual?

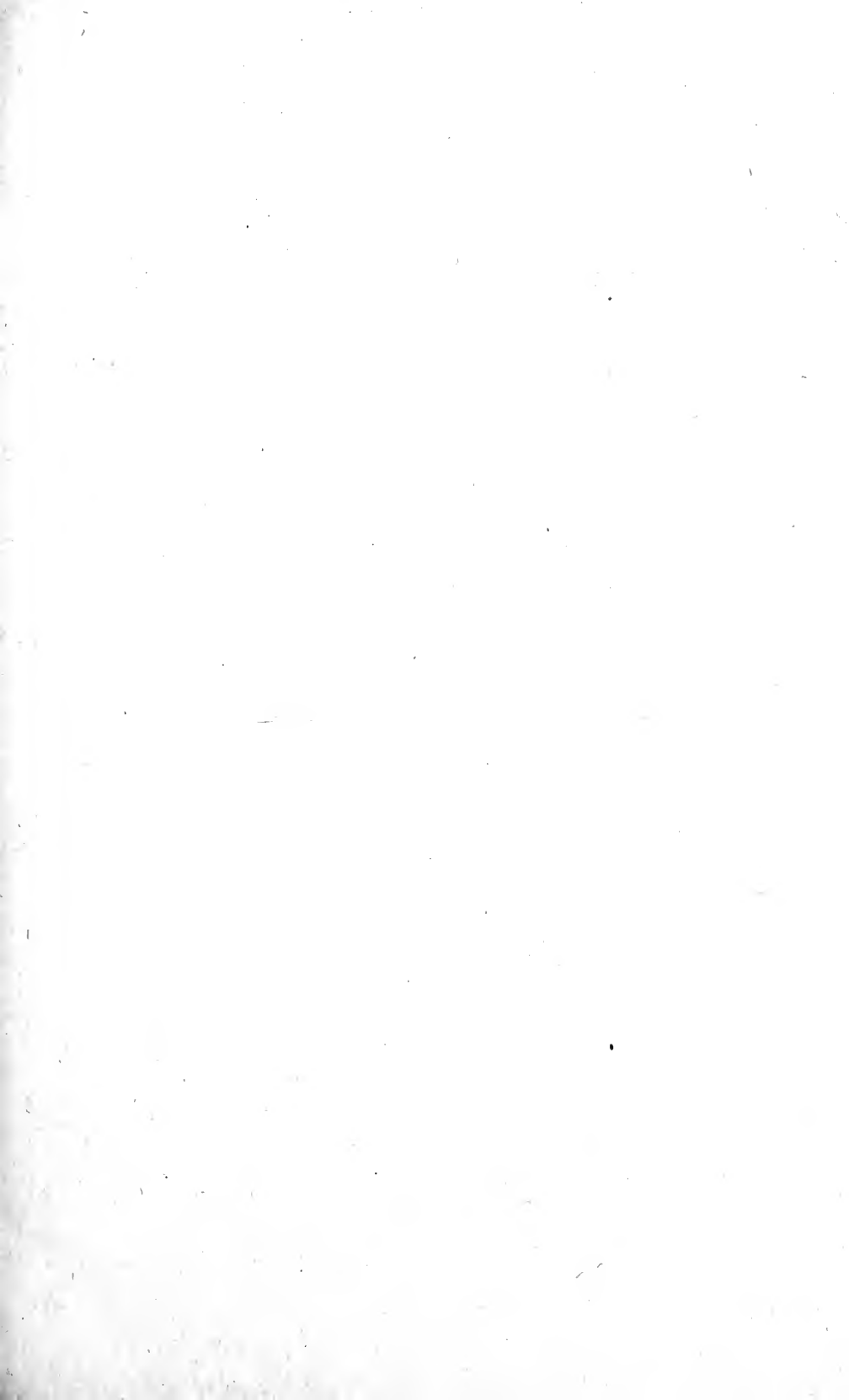
6. What is the function of the nervous arc in mental life? What types? What is the origin or source of all (?) stimulation? Does every stimulus lead to response? Of what kinds? When a stimulus reaches the central nervous system and results in a response, an adjustment, what has been the process involved? Has there been any 'transcendent self' to analyse the stimulus and to decide on the response,—or does the structure of the psycho-physical mechanism account for the whole integrated process?

7. If a man is knocked down by a blow or the force of the wind, as a purely physical object, is the event strictly 'behavior' of the organism? Where draw the line between behavior and physical manipulation by the environment? What are reflexes, simple and compound, in this connection? What human reflexes are there and how classified? What of instinct? Its nature, its several different types? What of instinctive tendencies? What relation to reflexes and instincts have habits and deliberative behavior?

References.

I. See Warren and Thorndike (1) (2) for illustrations. Ladd and Woodworth; Lickley; Edinger; Moore, B.; Parmalee; Drever; Watson (1) (2); Woodworth.

II. Dunlap (2); Donaldson; Conklin; Sherington; Stiles; Herick; Tashiro; Haldane; Hobhouse (1) (2); Morgan (1) (2) (3) (4); Loeb (1) (2) (3).





IV. The Relation of the Mental and the Physical.

1. Have sheets I and II given any ground for the formation of a theory explaining the relation of body and mind? Does experience, however, show two fundamentally different 'things' (the physical and the mental) whose relationship is not seemingly clearly given? What are some of the characteristics, given in experience, of thought and matter?

2. Is psychology particularly concerned with the formulation of a theory of the relationship of these two things? Must it be a final and 'absolute' solution, or would a 'working hypothesis' be satisfactory to psychology?

3. Are there events in the external world which are seemingly not connected with any conscious experience? Are all our conscious experiences related to physical events? Discuss the terms subjective and objective again.

4. Discuss the parallelism theory. What sub-types? What assumptions does the theory make? Do these assumptions seem more difficult than the facts they are trying to explain? What then would be the function of consciousness?

5. What of the interaction theory? What of its assumptions? Are they more simple than for parallelism, more in 'accord with experience'? What are its defects? How does neural activity 'cause consciousness' and vice versa? What is meant by cause here, and in science? Have we the same foundation for the use of cause in the relation of the mental to the physical as in the case of the physical with the physical?

6. Wherein does the double aspect theory differ from parallelism? What is meant by saying that conscious and neural events form one and the same series? What then is their difference? What is meant by the statement that 'conscious experience is a property of nerve substance'? Is the mental, then, 'given off' by the physical, i. e., is it a by-product? Discuss all that is involved. Could the same event, then, be both physical and mental at the same time,—physical to an observer, mental to the 'experiencer'?

7. Does it make any difference for theoretical psychology which of the above hypotheses are accepted? What of the practical application in psychology of religion, in educational psychology, in measurements and their significance, in psychoanalysis?

8. What significance for the theories of spiritualism, for the doctrine of immortality, for the transference of thought, mind reading, 'new thought', hypnotism, etc.?

References.

I. Breese; Titchener (1); Angell (1) (2); Warren; James (1) (2); Baldwin (1).

II. James (4) (5); McDougal (1) (4); Holt (1); Hobhouse (1) (2); Morgan (1) (2) (4); Moore, B.; Moll (1); Loeb (1) (2) (3); Hyslop (1) (2); Crawford; Coover.

V. Some Concrete Examples of Relationship.

1. If we classify connection into:

- a—Connections between processes in the sense organs and a thought or feeling (impressions),
- b—Connections between processes in the sense organs and a movement,
- c—Connections between a thought or feeling and another thought or feeling (associations),
- d—Connections between a thought or feeling and a movement (expressions),

have we exhausted all possible (theoretically) classes of connections? Do any other classes actually exist? Have maxims of teaching and ethics been based on other types? Which of the above is least the concern of psychology proper? Give several examples, concrete, of each of the above types.

2. Are the examples you have found of each of the above types learned, i. e., acquired during the life of the individual, or native, i. e., not so acquired? Can examples falling into each of these sub-divisions be given for each of the four types of question 1?

3. Classify each of the following cases of connections into one of the four main types, and into either of the sub-divisions under that type:

- a—Shutting the eyes when a bright light is flashed upon them.
- b—Bowing on sight of an acquaintance.
- c—Hearing 'ten times ten' and thinking '100' or 'square'.
- d—Seeing a pin and picking it up.
- e—Feeling pain at a severe blow.
- f—Thinking of an engagement and taking hat and coat.
- g—Thinking of 'I cannot tell a lie' and then of 'George Washington'.
- h—Feeling disbelief at the report 'The end of the world is due'.
- i—Seeing red when light of 460 billions vibrations strikes the retina each second.
- j—Thinking '8' after thinking '1-2-3-4-5-6-7'.

4. Discuss the subjects of the curriculum with reference to type of connections involved, actually, and supposedly.

References.

In particular Thorndike (1), from whom the above are, in part, taken. Also as for Topics II, III and IV.

VI. Psychological Methods

1. How do the methods of psychology contrast with those of physical science? In theory, in actual practice? Have the methods of psychology changed since the origin of the study? In what directions?

2. What is observation in the field of psychology? Is it the same as in the physical sciences? Does observation of someone else differ in nature and results from observation of oneself? What is introspection, retrospection?

3. Are there things which we cannot observe in the experience of someone else? For example, what can we observe of the experiences or the activity of a man who sits motionless before a picture or listening to music or with pen in hand before a sheet of paper, but not writing? Can we observe anything other than the type of facts just listed concerning him? What do the assumptions of the 'behaviorist' school say about the other actions of the man and the objective measurement of them?

4. What about the use of instruments of precision in physical science, and their use in the field of psychology? What has been and may be accomplished by their use? Give some examples of the results (quantitative) of their use? What, then, is the nature of 'thinking' to a behaviorist, and how would he show its presence by instruments? Can you show any results of like nature, but not exact, from common experience?

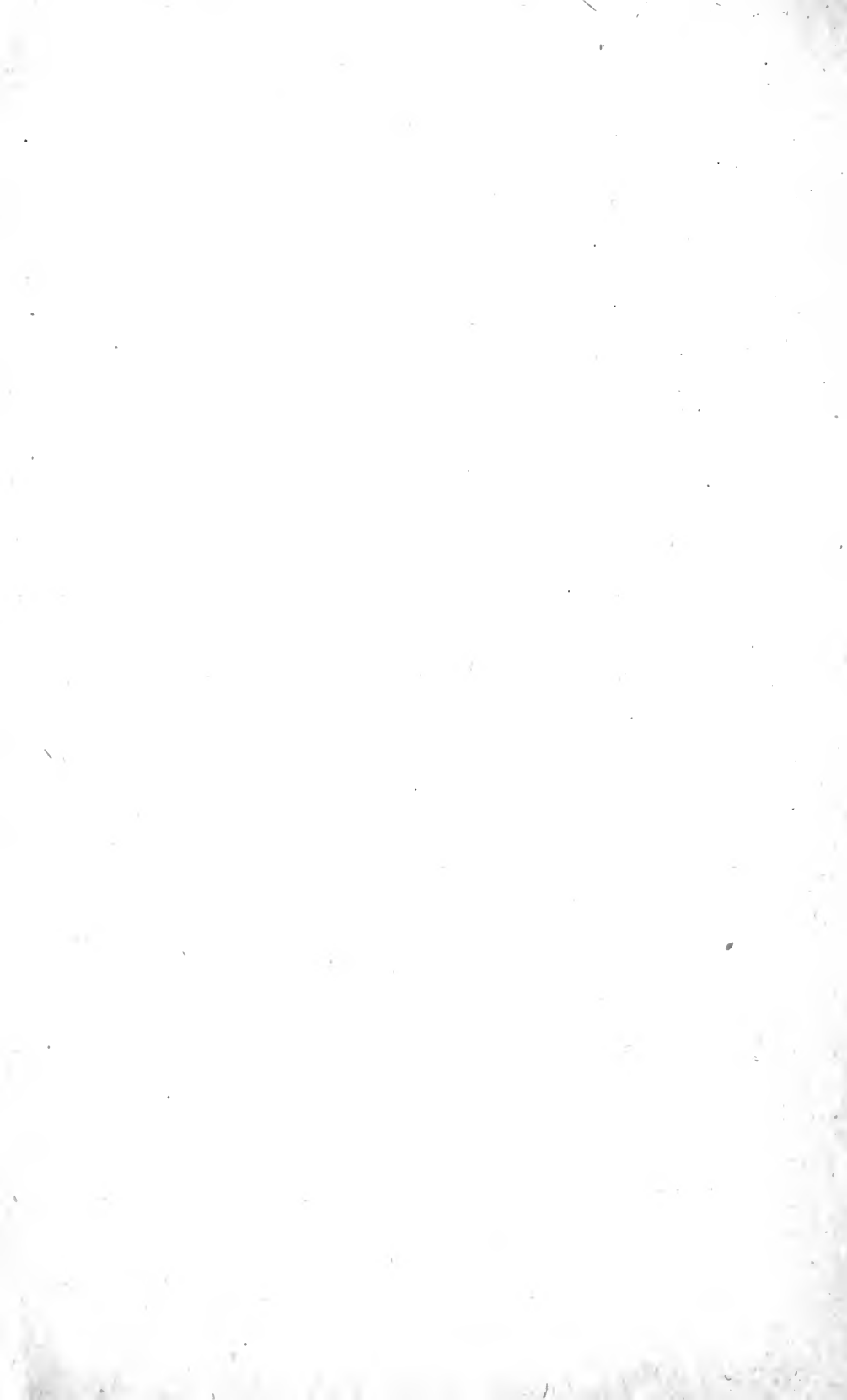
5. Is a psychological problem in the laboratory at all different from a problem in any other field, whether in the laboratory or in the larger field of general experience? What is the method of 'getting at' a problem in ordinary life? How do we find out if we have solved it? What happens if we have not? What is trial and error in the laboratory and in life? What is the cause of so much uncertainty and mysticism in much psychological work?

6. What is the method of the conditional reflex? To what sort of experiments can it be applied? Does it give results that the mere reflection or introspection of the subject could not have given? Describe the apparatus and methods used in obtaining a conditioned motor reflex. What uses are made of this method? How is the method of the conditioned reflex used for determining differential sensitivities?

7. Does the behaviorist neglect or refuse to consider the verbal testimony of the subject,—even if it is objectively incorrect? Explain. Are psychologic tests of memory, special abilities, the memorizing process, the rate of forgetting, etc., objective and capable of strict control? Describe several different varieties of tests, the methods of administering them, and the results obtained.

References.

- I. Same as for Topics I and II.



VII. Definitions and Sub-Divisions of Psychology

1. From the point of view developed in the previous papers, discuss the following definitions of psychology:

- a—P is the science of mind. (Titchener).
- b—P is the science which describes and explains the phenomena of consciousness, as such. (Ladd).
- c—P is the science of behavior. (Pillsbury).
- d—P is the science of individual experience. (Ward).
- e—P is the positive science of mental processes. (Stout).
- f—P is the study of the soul. P is the study of consciousness.
- g—P is the science which deals with the mutual interrelation between an organism and its environment. (Warren).
- h—P is that division of natural science which takes human activity and conduct as its subject matter. (Watson).
- i—P is that study whose task it is to point out and organize the observable facts of conscious life, and to formulate the theories, or hypotheses, necessary to explain each of these facts. (Breese).

2. Outline (giving some idea of method and materials, and apparatus if necessary) an experiment in the following sub-fields of psychology: General psychology, individual psychology, abnormal psychology, child psychology, genetic psychology, animal psychology, physiological psychology, social psychology, educational psychology, philosophical psychology.

3. Describe an experiment in any part of the field of psychology as a whole, in which the following methods would be used: observation, introspection, reflection, analysis, synthesis, measurement, comparison. Would any one method be used to the exclusion of all others? Are all methods more or less used in every experiment? May all these methods be used for the study of each branch of question 2 above?

4. From a consideration of the discussion of the above questions frame a definition of psychology which seems to you more adequate, and be prepared to defend it.

References.

Same as for Topics I and II.

VIII. Some Concrete Problems

1. If the subject matter of psychology, as a whole, is made up of:

- a—The nature of different kinds of thought and feelings,
- b—The ways in which they are related to brain and nervous system,
- c—The laws which govern their behavior and the bodily conditions accompanying them,
- d—The purposes which they serve in life and living,—then show, with reference to the following topics, which of the above heads they would mainly be treated under, what technique would probably be required to investigate them, etc., etc.:
- a—If a thing gives us pleasure it is good for us.
- b—The function and meaning of dreams.
- c—The differences between hate and anger.
- d—Why some people spell badly even after much study.
- e—Why it is harder to say the alphabet backwards than forwards.
- f—Why sorrow makes one unconscious of surroundings.
- g—Why Mr. A. is an excellent violinist.
- h—What feelings guide us to self-preservation.
- i—The fastest reader remembers best.
- j—A good linguist is a good mathematician.
- k—John learns his lesson twice as quickly as James.
- l—I have never forgotten my nursery rhymes.
- m—Mr. S. has recently become a radical.
- n—We are unhappy without the company of other people.
- o—John is as good a mathematician as his father.
- p—After ten years lack of practice Mr. A. was still able to skate.
- q—Men are more gifted as mathematicians than women.

2. If the subject matter of psychology is grouped under the heading of: a—sensations, b—percepts, c—mental images, d—memories, e—feelings of meaning (general, individual and abstract), f—feelings of relationships, g—judgments, h—emotions, i—feelings in connection with conduct (i. e., states of so-called 'will'),—then give examples of each of these from the field of experience. Show examples of compounds of these, as well as intermediate forms. Give examples of school studies which stress h, e, b, i, etc. Analyse a page of a book, or a letter, showing the headings under which, in the main, each sentence comes. With which of the above are the different parts of speech connected? Give examples.

3. Can you think of any problem which would properly come within the province of psychology which would not fall under one of the divisions of question 1; or question 2?

References.

In particular Thorndike (1), from whom, in part, the above are taken. Also as for Topics II, III and IV.

IX. *Attention; I.*

1. Discuss the meaning of mind, consciousness and experience, with reference to one another. Have they much the same meaning,—do they depict the same thing from different points of view? What about attention? What connection has it with the above three concepts? Is it too the same thing?

2. Discuss the paragraph beginning on page VIII of Watson (1). Does a discussion of attention lose sight of an objective view-point? Consult other texts,—which do not discuss attention, as such?

3. Give a description of the 'field' of your consciousness at any given moment, i. e., give a cross section of your experience? Is this really possible? What general characteristics has it, what special, temporary, permanent characteristics? Have you any way of determining whether your 'attention' is like that of any one else?

4. Is such a cross section seemingly an integrated whole, or a group of 'things' which happen to be there? Note down on a piece of paper and bring to class for comparison and discussion, all that 'is in your experience' when you look at the last word of the page entitled "To the Student." (Do not read it until you are ready to write. Do not do this in company with other students).

5. Try to think of the German, French, Latin, or Spanish equivalent for the first word of the first line of the page entitled "Preface". (Same directions as above.) Try to note all that is in your experience at the moment,—not the train of thought that follows. Discuss all that happened. Is there anything of value to be gained from such an introspection? Could you derive from this any conditions for good studying? Would you need additional material? Of what nature?

6. Can you give from the material of the above questions a definition of attention? What are some definitions given in the various references? Is attention a relative term? Are there different degrees of attention? What effects would this have on the curricula for different ages? Is it a matter of attention only? What other factors, if any? What lies behind the ability to attend? Is the ability to attend a native one, an acquired one, or what?

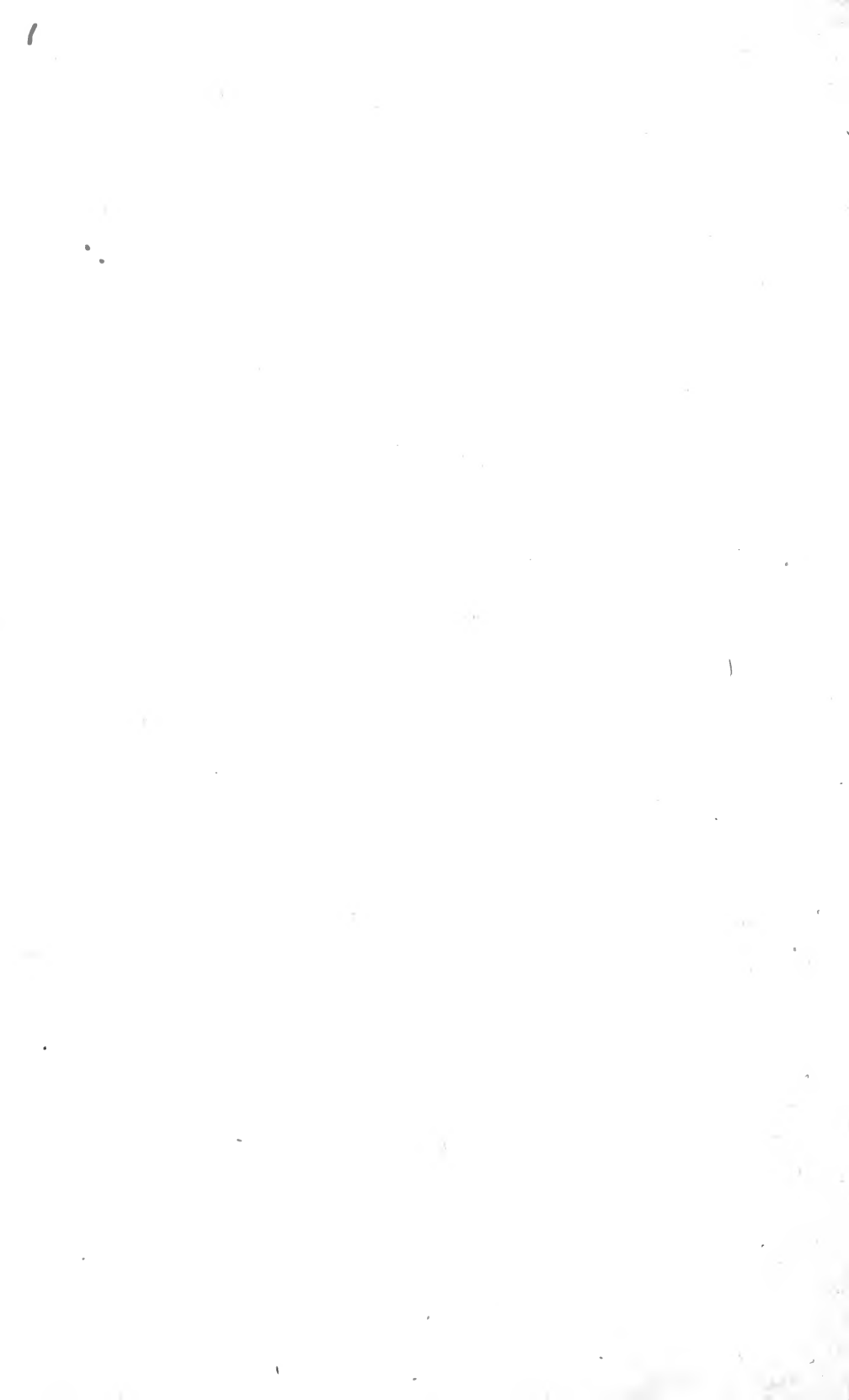
7. Observe yourself in a period of so-called musing or day-dreaming. Do you find any points of comparison with the phenomena of attention? What of change, continuity, effort, design, etc., in this connection?

References

I. Angell (1); Breese; Colvin and Bagley; Calkins; Dunlap (1); James (2); Judd (1); Külpe; Münsterberg (1); Ogden; Pillsbury (3); Stout (2); Titchener (5); Thorndike (1).

II. Arnold; Bagley; Colvin; Ebbinghaus; Höffding; Hunter; James (1); Ladd; McDougal (1); Marshall (2); Pillsbury (1); Parmalee; Ribot (1); Rowe; Stout (1) (3); Titchener (1) (2); Watson (1); Warren; Woodworth; Ward, J.; Yerkes; Wundt (1).





X. *Attention; II.*

1. Are there different 'kinds' of attention? What are there? Distinguish between the attention in the following situations: reading an attractive novel, doing your lessons (when you would rather not do so), being won over by a speaker who bored you in the beginning, being alone in a dark and dangerous place, a cat 'playing' with a mouse, a clerk doing routine work. Any other varieties? Are the above all different? Arrange in some sort of classification, with appropriate, descriptive names.

2. What types or varieties of attention does the school use? Always? Could all the varieties be used? Which type do you find yourself using most frequently in relation to your studies?

3. Is there something 'back of' attention? 'What' does the attending? Can you define attention in terms of mind, experience, or consciousness? Is attention merely a matter of consciousness? What part, if any, does the body play? Discuss that definition of attention which reads, "Attention is the power of the mind to concentrate."

4. Give a more detailed analysis of the nature of your experience when you are attending to something. Can you find some five general characteristics? Perfectly distinguishable? Always there? Is attention a process, an activity, a thing, or a part of a thing?

5. How long can you attend to one thing in the strict sense of the words? Can you attend to some things longer than to others? Why, and what does this imply for teaching? Give illustrations.

6. Does attention fluctuate? In what sense? What occurs with a just audible sound, a just perceptible light to which you are attending?

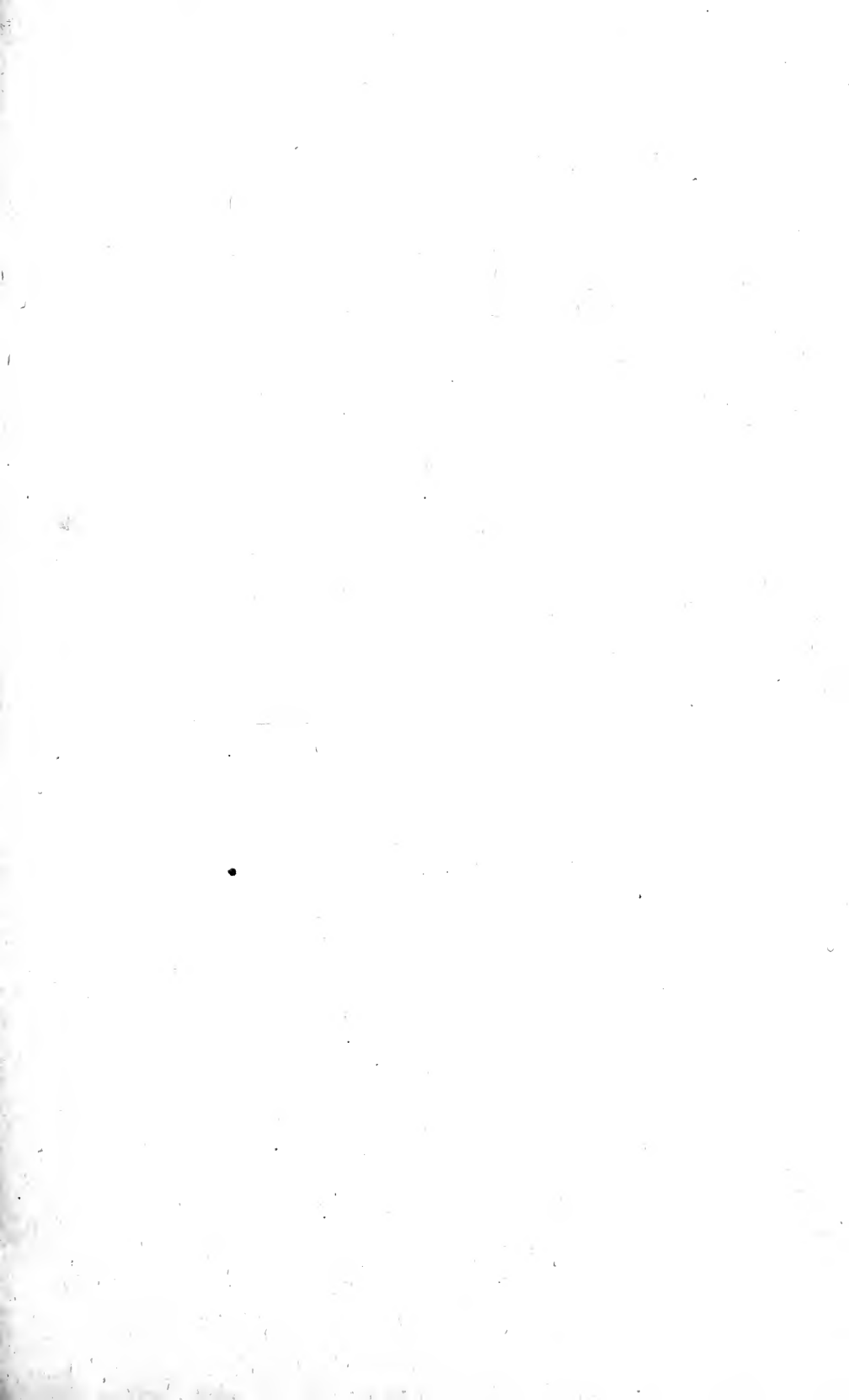
6. To how many things can you attend at one and the same time? Of the same kind? Of different kinds? Devise some experiments that would give data along this line.

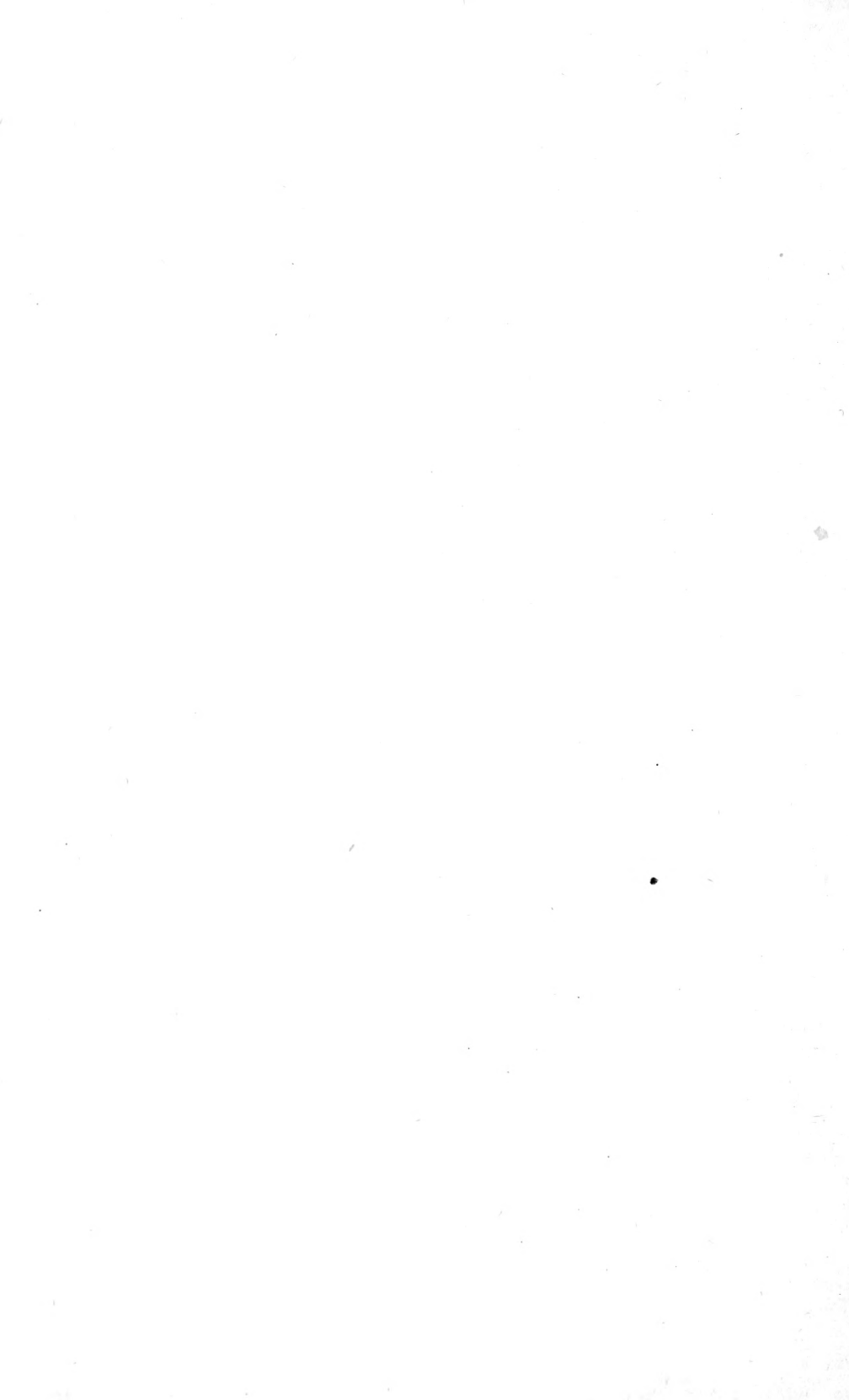
8. What is the difference between attention and interest? Do we attend to a thing because we are interested in it or are we interested in it because we attend to it? Always? Discuss with reference to the beginning of experience of a child.

9. Discuss attention from the subjective point of view, listing such characteristics as appear there, and then make a list of its objective characteristics, i. e., those characteristics which other people would be aware of. Discuss "Attention is the clearness into and out of which objects move" (Hunter). Is there such a thing as inattention? Why do people walk, smoke, tap, whistle, etc., when attending severely to a difficult task? Always?

References.

Same as for Topic IX.





XI. *Sensation; I.*

1. When your field of attention is analysed into 'things', can the process go any further? What smaller 'elements' can be found? Are they definitely separate or are they a part of the total field? What relation do the smell, the feel, the color, the weight, the shape, the size, etc. etc., bear as a whole to the 'thing' called a rose?

2. Can you analyse such 'sensations' any further, i. e., into still other constituent parts? What is red, as a sensation, when you divide it up into the elements which compose it? Give a definition of sensation based on this fact.

3. Explain the following passage from James,—“Sensation is the immediate result of stimulations before further knowledge or past experiences are awakened. Sensation is the basis of all knowledge. A being without sense-organs of any kind could never know anything of the world about him.” Do you agree with the second sentence? Be definite in your answer. Do we ever have sensations of such a nature as in this definition?

4. What is the nearest to a pure sensation such as James describes above that enters our present experience? What is added to the other sensations, that makes them different, and is this 'what' always the same? Give examples of a nearly pure sensation changing to a sensation as usually constituted.

5. What is the general theory of the mechanism of sensation, i. e. what have body and sense-organs to do with the matter? What, in general, has been the history of sense-organs and presumably sensation?

6. What is a stimulus? Name and classify different types or kinds. Are we conscious of a given stimulus, or do we assume we are? i. e., is our sensation a matter of something else as well as the stimulus? Explain.

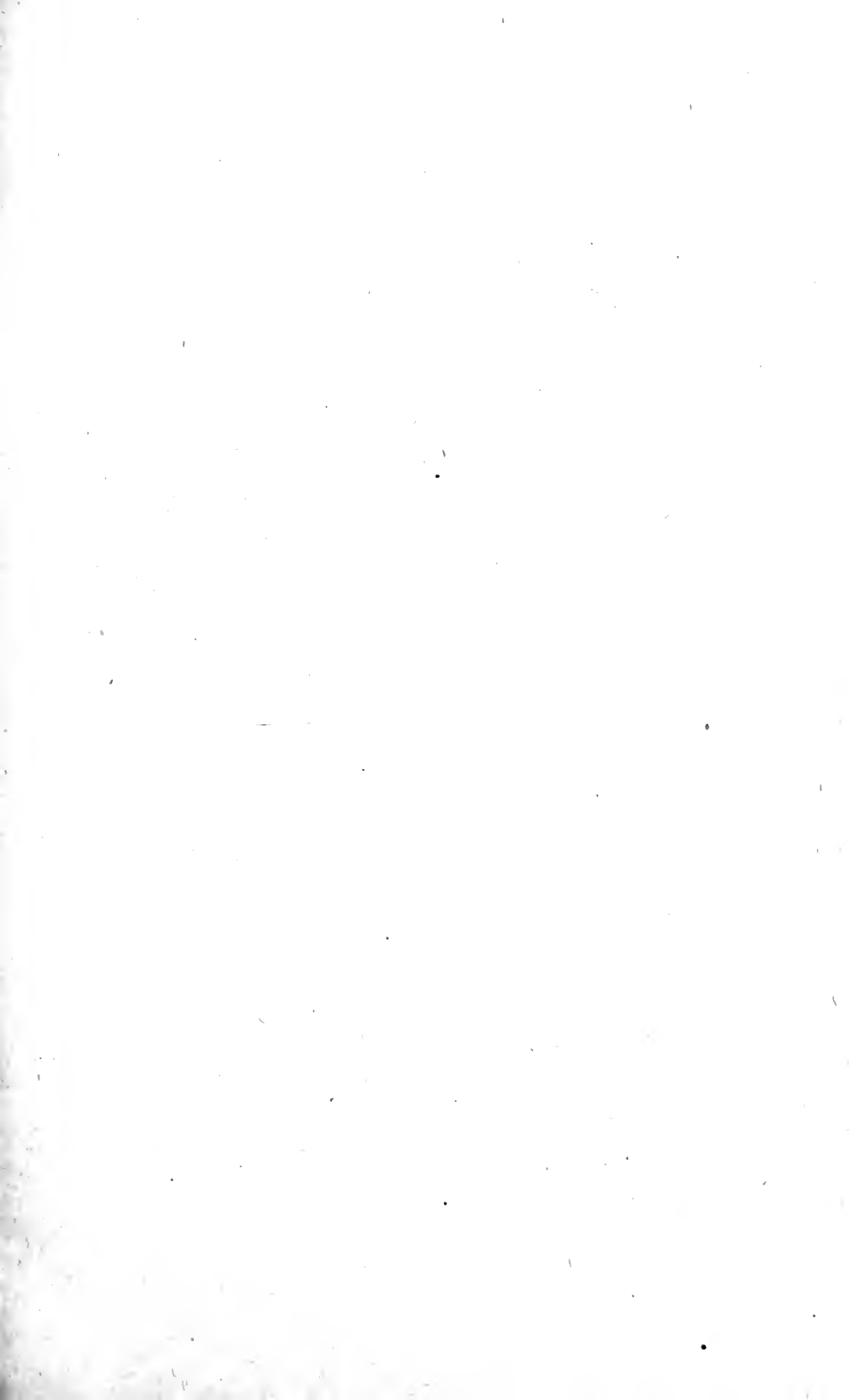
7. Show the relations between the following things, and illustrate by a diagram: stimulus, sense-organ process, brain-process, conscious process.

8. Make a list from your reading of, a—The different kinds of sensations; b—The different qualities or characteristics of any sensation. (The answer to 'a' should contain six or seven main heads, that to 'b' some four heads.)

References.

I. Angell (1); Breese; Colvin and Bagley; Calkins; Dunlap (1); James (2); Judd (1); Külpe; Münsterberg (1); Ogden; Pillsbury (3); Stout (2); Titchener (5); Thorndike (1).

II. Bagley; Colvin; Höffding; Hunter; James (1); Ladd; Mach; McDougal (1); Marshall (2); Parmalee; Stout (1) (3); Titchener (1) (2); Watson (1); Warren; Woodworth; Ward, J.; Yerkes; M'Kenrick and Sondgrass; Wundt (1). (3).





XII. Sensation; II.

1. Is sensation co-terminous with the stimulus,—i. e. does the former begin as soon as the latter, fluctuate parallel with it, and end at the same time? Support your answer by experiences and experiments. Is this true for all senses; equally?

2. Is the after-sensation the same as the real sensation? Always? Illustrate. Does a sensation continue at the same 'pitch' or intensity for the duration of the stimulus? Ever? Illustrate. Does the stimulus become less or more effective? Show under what conditions, illustrating from the field of experience. Is it a matter of attention? Always?

3. From Topic XI, question 8, the attributes or characteristics of sensation were found to be,—? (Q-I-E-D.) Are all of these equally strong, i. e., as easily identified? Which is most clearly an attribute of all sensations? Is Q shared, i. e., the same Q, by any two sensations? Is pink more like red in respect to Q than is blue; are red, pink and blue more alike in Q than red and sweet? What is the probable basis for this? (See Warren).

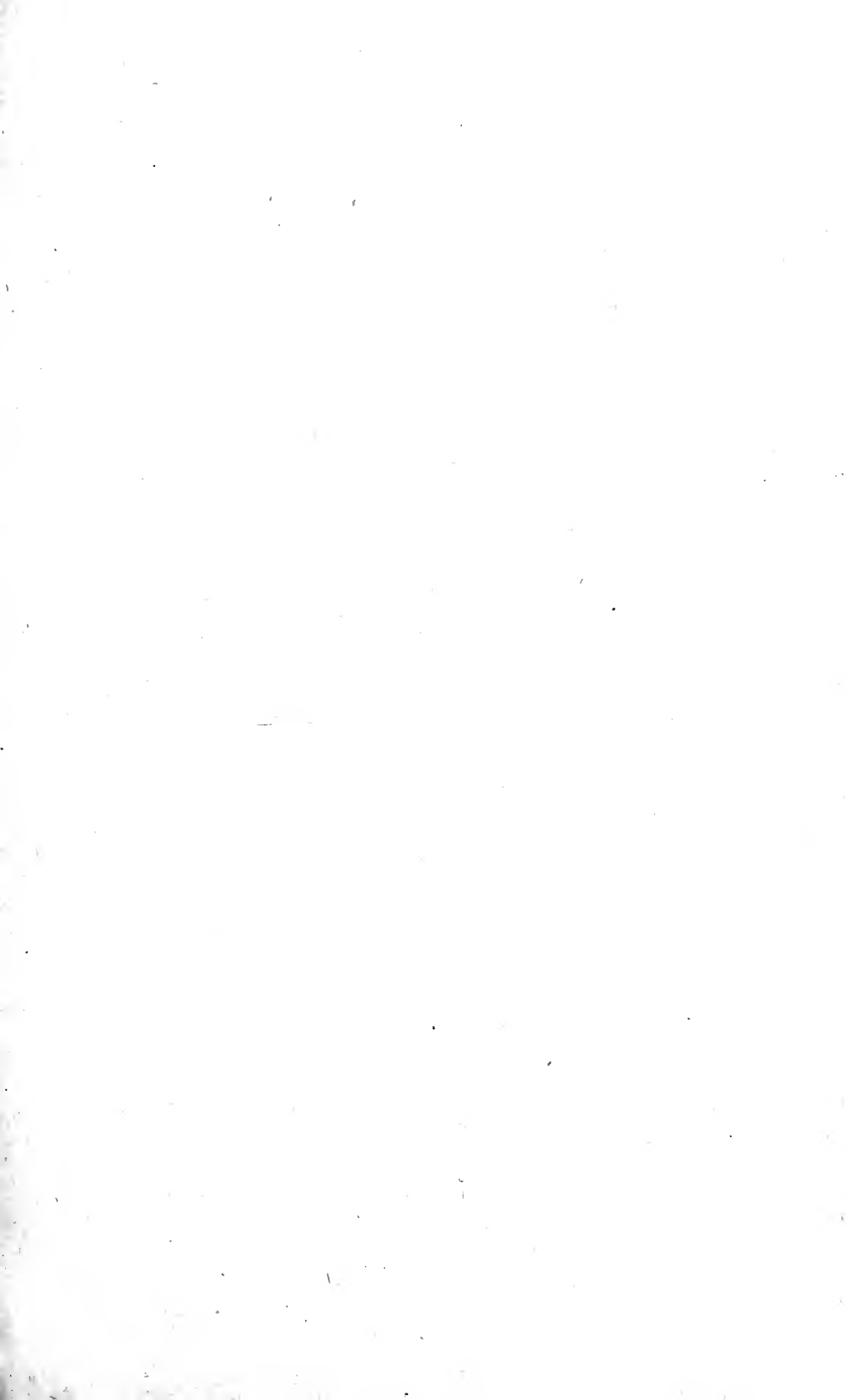
4. In the case of adaptation or adjustment to a sensation, as in part of Q 2, is it the I or the Q of the sensation to which we adapt? i. e., does I or Q change? Is I a characteristic peculiar to one given sensation or shared in by all? Can the Q of a sensation remain the same while the I changes? Illustrate all this. Are there probably Q's of stimulus to which we are not sensitive? I's also? What would be the meaning of the phrase 'threshold of sensation';—is there more than one, are they the same for all senses,—at all times? Is attention involved here? Explain.

5. Can we arrange Q's and I's in an ascending series? Would the differences between successive Q's or I's be a personal matter, i. e., peculiar to each individual, or some function of the preceeding Q or I? What is Weber's law, and Fechner's modification of it? Could you devise apparatus to illustrate it? Is the ratio in question the same for all senses? For all degrees of I and Q?

6. Does all sensation, i. e., the stimulating of any sense-organ, possess E? Can you describe it for smell, taste, sound? What is the probable basis in the organism for this? Is it more or less clear (i. e., E) in the case of sight and skin-feeling? Is the same true of D? Is this a surer characteristic? Is it the same as E?

References.

Same as for Topic XI.



XIII. Organic, Kinaesthetic and Cutaneous Sensations.

1. Where do you feel hungry? Describe the sensation. Is it like any other sensation? Is it warm, cold, rough, blue, etc.? Is it accompanied by any such sensations as hot, cold, rough, etc., etc.? Does thirst resemble hunger? How so? Are there any similar sensations during a fit of anger,—or during a moment of fear? Are these feelings separate from the emotion of fear, anger, etc., or are they the same thing?

2. What do we mean by such expressions as 'his heart is in his work', 'he is liver hearted'? Why is it better to speak to a 'grouch' if you want a favor, after he has had a meal? Can you give other instances of similar nature? What are the sensations of going under an anesthetic?

3. Close your eyes and have someone place your arm and hand in a definite position, retain it there for a moment, then drop it. Open your eyes and replace the arm in the original position. How can this be done? What is the nature of the sensation involved? Is it clearer for some joints than others? Is it a matter of the skin sensations? How would you prove or disprove this? What possible or probable use have these sensations?

4. Close your eyes, have someone give you a gentle push while standing evenly on your feet. As you 'lose your balance' what sensations enable you to recover it? What do your arms and head do? Is this involved in the ability to walk a tight-rope? How so? What applications have recently been made of these sensations?

5. What is the 'sense of touch',—is it simple or complex, i. e., made up of several different sensational qualities located in the same or near region? What elements can you distinguish? Can you devise experiments to separate the various elements and locate them in a given region?

6. Is there a 'local sign' for sensations from different parts of the skin? All parts? Does this mean the sensations themselves are different? Which kind of sensation (end-organ) is most frequent in the skin? Explain how a cold spot can be stimulated by heat.

7. Which of the skin sensations travels fastest to the central nervous system? Can you see any reason for this? Is pain unpleasant? Is the unpleasantness the same thing as the pain?

8. Are feelings of well-being, depression, exultation, gloom, etc., sensations? To what are they, in part at least, due? Discuss the function of the ductless glands. See Watson (1).

References.

Same as for Topic XI. See also Cannon; Crile; Greenwood; Herbert.

XIV. Olfactory and Gustatory Sensations.

1. What is the general nature, the location and size of the olfactory organ? In its method of stimulation does it resemble more touch, hearing, sight, or taste? Can you distinguish in connection with this organ the four characteristics of Topic XI, Question 8, b.? Does the sense of smell play any large part in your conscious life? What are the two theories of the nature of olfactory stimulation?

2. Can you recall or image odors as well or as easily as sights or sounds? Look over the classification of odors as given in Watson (1), p. 71, Warren, p. 197, or Breese, p. 132, and note how many of the total number you can recall or image;—secondly, whether those of a given group do seem similar to you;—third, whether any class or any prominent type has been left out? Does this classification bear any resemblance to either that of sounds or colors? Does chemical theory aid in classification? Is it possible that the sense of smell is no longer complete in man, and that there are gaps, etc., etc.?

3. Is the sense of smell, in general, a source of pleasure, as are the other senses, or an indifferent matter, or one positively annoying? What is the general feeling about this sense? Is there a sort of unpleasantness in connection with the word 'smell' and the functioning of the organ? Why? Has this, possibly, any connection with its efficiency, etc.? Is there any explanation in the fact that some odors are accompanied by other sensations? Give examples. Is habit a functioning factor here?

5. Is the threshold low for this sense? Lower in animals? What about 'just noticeable differences'? What about adaptation? The effect of one odor and adaptation to it on the perception of or sensibility to other odors or substances? What is the relation of 'moods', 'emotional attitudes', 'dim' recollections, to the sense of smell? Why are odors used in religious rites and ceremonies? What are the aesthetic values of certain odors?

6. Why does a consideration of the olfactory sense lead to a consideration of the gustatory sense? What is the nature of the organ for taste? The nature of the stimulus? The system of classification? Are gustatory sensations fused, at times, with other sensations? Does the same substance give different taste sensations in different regions of the organ sensitive to taste? Explain and give examples. Are some of the taste sensations slower to exhibit themselves? What about adaptation, contrasts, and fusing of tastes? Thresholds and just noticeable differences?

7. What about Q, E, D, I, in connection with taste? What about the aesthetic function of taste? Is there in general, a pleasant significance of the word 'taste'? What about smell in this connection? Is there the same emotional appeal as in smell?

References.

Same as for Topic XI.

XV.—Auditory and Visual Sensations.

1. What is the general nature of the organ of hearing? What two theories have been offered to account for its functioning? Is the organ and the sense comparatively complex, indicating high development? How do the ears of animals compare?

2. What is length, amplitude and form, in connection with the stimulus given to the ear? What is the difference between a 'noise' and a 'tone'? Are there separate end-organ or receptors for each of these? How many different tones are there, and within what upper and lower limits do they extend? What differences do individuals exhibit in the ability to differentiate, to reproduce and to recognize tones? What are 'tonal islands' and what is the change in ability to distinguish tones with age? To what does this point?

3. What are 'compound' tones, partials, timbre? What about intensity and extensity in sound? To what are these characteristics probably due?

4. What is the general nature of the eye? What is the real sense organ, and what the accessory apparatus? Where is sensitivity to movement greatest, and what is the significance of this? Where is greatest acuity of vision, where the sensitivity to color (s)? What is the blind spot? Explain near and far sightedness, astigmatism, etc. If the eye is a camera, why do we see things 'right side up'? Devise some experiments that would alter the 'way' in which we see things. What would be the temporary and the permanent effect? Here, as in the case of hearing, tasting, etc., are we *conscious* of the process or the conditions in the sense organ,—or of what?

5. What is the function of the rods, and of the cones in the structure of the eye? What is 'twilight vision', and what facts go to show the manner in which it takes place? What about color vision in this connection, and the location of cones in the eye?

6. What is the normal stimulus for the sensation of light or color? Is there one definite stimulus for one definite sensation? Compare the ear, in this respect. What two kinds of visual sensations are there? Is seeing 'black' the same as seeing nothing, i. e., having no stimulus? Explain. Can both the sensations of light as such, and colors, as such, be arranged in series? What are the colors of the spectrum? Are these the so-called elementary colors? How does this compare with the classification of the artist who says there are three primary colors,—red, blue and yellow? What is the basis of the psychologic choice?

7. Explain the meaning of saturation, the Purkinje phenomenon, complementary colors, the color pyramid, adaptation for light and color, 'zones' of the retina, color blindness. Outline the color theories of Young-Helmholz, Hering and Ladd-Franklin.

References.

Same as for Topic XI.



XVI. Perception; I.

1. If sensation is consciousness of the qualities of an object, what relation to sensation does perception bear? Can you say that the perception of a rose is the sensation of color plus that of smell plus that of texture, etc.? What else, if we perceive a rose, is necessary? Is perception a process?

2. What part does past experience play in perception? In sensation? When we 'see' something absolutely new, not previously experienced, what do we 'perceive'? What if we are unfamiliar with a 'thing', say a complicated printing press? Do we perceive it as the maker does? Does a trained scientist actually perceive more than the beginner? Is 'perceive' the best word here? Do we ever perceive more than we 'see', or contrary to what we 'see'? Give examples. Can the same thing be perceived in entirely different ways? Give examples.

3. Is perception a process of receiving sensations, then interpreting them in the light of past experiences? Are we conscious of such a process? Is there 'anything' which does the interpreting? Is the period of interpretation ever very lengthy? Explain perception in terms of nerves, brain structure and modifications, etc. What does pathology show in this respect? What is the relation of perception to the following terms; meaning, imagination, concept, judgment? Explain illusions in connection with the process of perception. What of hallucinations? What is 'complication'?

4. What is the function of perception in personal experience? What qualities of an object do we usually perceive? How do you explain the fact that a very little careful examination brings out qualities and characteristics of an object or person which frequent ordinary experience had not? How do we determine whether our perceptions are true or false?

5. What are the possible different causes of illusions? Give examples due to each cause. What is the difference between a pure and a mixed illusion? Discuss,—“The so-called fallacy of the senses of which the ancient sceptics made so much account, is not a fallacy of the senses proper,—” (James) What of hallucinations in this connection? What of dreams? Visions? Voices? What of such 'fixed ideas' as that which leads a man to think everyone is plotting against him?

6. Give examples of illusions due to the following factors, alone or combined;

a—similarity to something very familiar, (often experienced.

b—similarity to very recent experience (s).

c—harmony with wishes and desires.

d—harmony with the setting, mental and environmental.

e—harmony with the most easily roused mental state.

References.

I. Angell (1); Breese; Colvin and Bagley; Calkins; Dunlap (1); James (2); Judd (2); Külpe; Münsterberg (1); Ogden; Pillsbury (3); Stout (2); Titchener (5); Thorndike (1) particularly for diagrams and experiments.

II. Arnold; Bagley; Colvin; Hoffding; Hunter; James (1); Ladd; McDougal (1); Goddard (2); Freud (2); Pillsbury (1); Rowe; Stout (1) (3); Titchener (1) (2); Watson (1); Warren; Ward, J.; Yerkes; Wundt (1) (3).

XVII. *Perception; II. Space and Time.*

1. If, in order to get to the corner, I must first go half the distance, then half the remainder, then half the second remainder, etc., etc., will I ever get there? If, in actual experience, I do get there, what is the difficulty with the statement above? (Answer in terms of psychology.) If the above seems merely absurd, consider how you would remove from a pound box of sugar half of it, then half the remainder, etc., etc., till it was all gone. Is the difficulty the same? The answer?

2. Is space a thing? Do we 'perceive' it? Is there more than one space? Different kinds of space? Is the space of your geometry lessons the same as the space you walk and work in? Is the consciousness of space due to a sensation, the same as the consciousness of red, or cold?

3. What are the two theories concerning the genesis of the consciousness of space? What part does sensation play in the modified theory of James? What is Wundt's point of view and his arguments. Explain the significance of 'local sign' in the stimulation of the skin. What other senses give 'spatial' elements? What effect does the stimulation of areas of the retina have in the formation of the consciousness of space? Is the space that this kind of experience builds up the same as the space of the problem of question 1? How, then, do we arrive at such a conception?

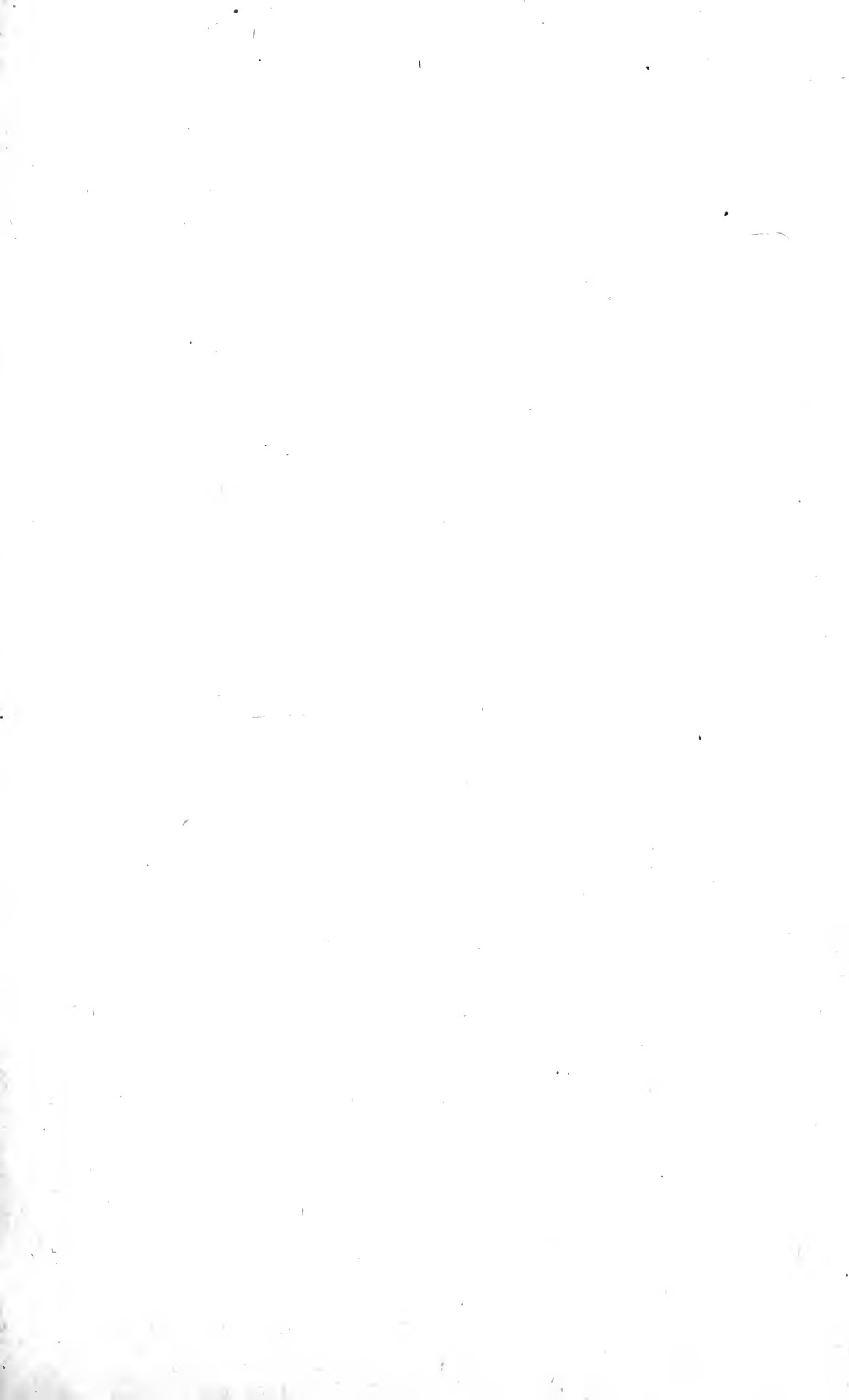
4. Does the stimulation of the skin have any elements of 'depth' in it, i. e., any third dimension? How do eye and hand (skin) co-operate to bring about a consciousness of this dimension? What about the fact of there being two eyes, the fact of convergence and accommodation? What of the (apparent) size of an object, its clearness, changes in color, light and shadows, perspective, movement, etc., etc.? Are spatial illusions more frequent in the case of visual or skin sensations? (See examples in Breese, Warren, Witmer.) What types of explanation?

5. Is time a thing? Do we 'perceive' it? Can you state a problem in 'time', involving the same difficulties as the space problem of question? Is the consciousness of time due to sensation? Are there different kinds of time? Is time or the consciousness of time connected with space or the consciousness of space? Or with what? Can we perceive space apart from objects? Time apart from objects?

6. What opposing theories of the genesis of the consciousness of time? How much time can we be conscious of 'as present'? Compare space. What part do the ear, the skin, the internal organs, etc., play in the perception of time? What is the difference between the actual (psychical, specious) present and the logical (philosophical) present? Has time a beginning, an end? Has space an end? How would you discuss these questions psychologically? Explain "The future comes from behind us." What is the meaning (psychological) of "The hour seems endless." "The week just flew by." Does the subjective estimation of time change with age?

References.

Same as for Topic XVI.





XVIII. *Memory; I.*

1. What part do the sense organs play in memory? On what does the ability to remember depend? Explain the statement, "Past experiences are stored in the Mind."

2. What are the differences between the experience of remembering what a certain house looks like and what your friend's telephone number is? Do you suppose your experiences in this connection are like those of everyone else? (See Galton.) How do you distinguish the house itself (percept) from your image of the house? What characteristics has the former that the latter has not? Is it ever possible to confuse percept and image? Is the structural basis for the image (of the house) the same as for the percept? Is such an image (of the house) used for other purposes than memory proper?

3. What differences in the treatment of memory by Watson (1) and Stout (1) (3) or Ward, J.? Breese gives a definition of Memory as "the retention, recall and recognition of past experiences." Locke defines it as "the power of the mind to revive perceptions which it once had had, with the additional perception annexed to them that it has had them before." Discuss and compare these with what you find out from Watson, Stout and Ward.

4. Can you give an objective description of the processes of retention, recall and recognition, so that no 'power' or 'entity' seems to be behind them? Are the images which we have when we remember, (or the experiences), always in existence, even when we are not conscious of them? What of the Freudian idea of the 'sub-conscious', the 'fore-conscious' and the 'conscious'?

5. Is the ability to retain the same for all individuals? For all events of a given individual? Even if a given experience is retained can it be recalled always? Do particular memories or images rouse themselves? Does the process of association depend on something else at bottom? Show the function of the following factors in reviving memories, and give examples of them from experiences as well as applications of them in school practice; recency, vividness, frequency, mind-set at moment of recall, purpose at moment of recall. Is the process of recognition always correct in the verdict given? What is the feeling of familiarity based upon? What is the function of memory and its constituent parts in successful adaptive behavior?

6. Does all memory involve recall and recognition? How about remembering how to skate, dance, swim, etc., after years of not doing so? Is there conscious recall, recognition? Are all motor habits of this kind? All other habits?

References.

I. Angell (1); Breese; Colvin and Bagley; Calkins; Dunlap (1); James (2); Judd (2); Külpe; Münsterberg (1); Ogden; Pillsbury (3); Stout (2); Titchener (5); Thorndike (1), particularly for exercises, etc.

II. Brill; Freud (2); Galton; Münsterberg (7); Watt; Höfding; Hunter; James (1); Ladd; McDougal; Rowe; Stout (1) (3); Titchener (1); Thorndike (2) (3); Watson (1); Warren; Ward, J.; Yerkes.

XIX. *Memory; II.*

1. What is the connection between ability to remember and general intelligence? Can you offer any explanation of this? Are there 'types' of memory? Have we just one 'memory, which functions' well here and poorly there, or what? Explain the boy's ability to remember all the data about professional baseball but not to remember his lessons. The musician's ability to conduct without a score but his forgetfulness of his phone number. Why do some people learn vocabularies well, others formulas and logical matter? Explain and illustrate; total recall, partial recall, desultory memory.

2. Can we 'train the memory'? What does memory fundamentally depend upon? Does this mean that we can never improve in respect to remembering? What of the differential effect of heredity and the environment here? Would improving our memory for, say, mathematical formula, improve it also for vocabularies of foreign words? How would you go about to prove your answer?

3. How far back in your experience can you now remember? What would be a possibly successful method of recalling memories now beyond your reach? If you are obliged to learn a speech what would be the best method of doing so? What reinforcements of bodily positions, sound, etc., could you bring in? What about learning it as a whole or in sections? How would you make sure of the facts in this case? Would you use recall, repetition or emphasis most? How would you distribute your time,—all at once, or how? What are the facts here?

4. Do we remember best the agreeable or the disagreeable experience? Always? Why do we forget quickly the material which we 'crammed' for an examination? Is cramming economical? What of interest and memory? What about the time needed to relearn forgotten material in comparison with the time needed to learn it originally? Why is this? Do we, then, never absolutely forget anything? Do early experiences determine the selection and treatment of present experiences even if the early experience is too feeble to rise to open consciousness?

5. What is the effect of old age, extreme fatigue and disease on memory? What experiences do the aged forget easiest? Why? What kinds of words are first forgotten in age?

6. What of pathology in connection with defects of memory? Discuss; amnesia, hypermnesia, paramnesia. Give examples.

7. Read some chapters from one of the popular books on "How to Train the Memory", which you see advertised in the papers and magazines. Does the series,—triangle-pyramid-Nile-Delta,—delta, help you to remember that the Greek letter of that name is represented by a triangle with the vertex up? To remember that Denver is the capital of Colorado, is it of any value to go through the series; Colorado-dodo-bird-dense-air-Denver? If these systems seemingly improve the ability to remember or recall what is the probable reason in actual fact?

References.

Same as for Topic XVIII.

XX. *Imagination.*

1. Is Memory a process of imagination? What is the other, the ordinary sense of the word? If memory, to be complete, requires recognition, what about the other use or functioning of past experience in the form of images? Is there ever recognition,—is recognition an essential factor in their use? What is the use or value of productive imagination? Show its function in science, mathematics, literature and the arts. What is 'fancy' in this connection? Can we, however, 'imagine' apart from previous experience? What part does experience play in the imagination of the Cubists, the makers of Utopias, the theorists of fourth and higher dimensions? What about dreams?

2. What types of imagination are usually given? Do you find that your images are exclusively confined to one type? Does one type predominate? Do you find images of tastes and odors frequent,—easily recalled? Touches? Why are auditory and visual images the most frequent with motor next? (See Galton for illustrations and examples.)

3. When you read the sentence,—“The horse is cold from standing too long”, do you get an image of the word horse? If so, what color was it, what sort of horse, how standing, etc.? If you did not get an image explain how you understood the sentence. Does the fact of the presence or absence of the image lead to any conclusions about language habits or thinking? Can you think without words? Without images?

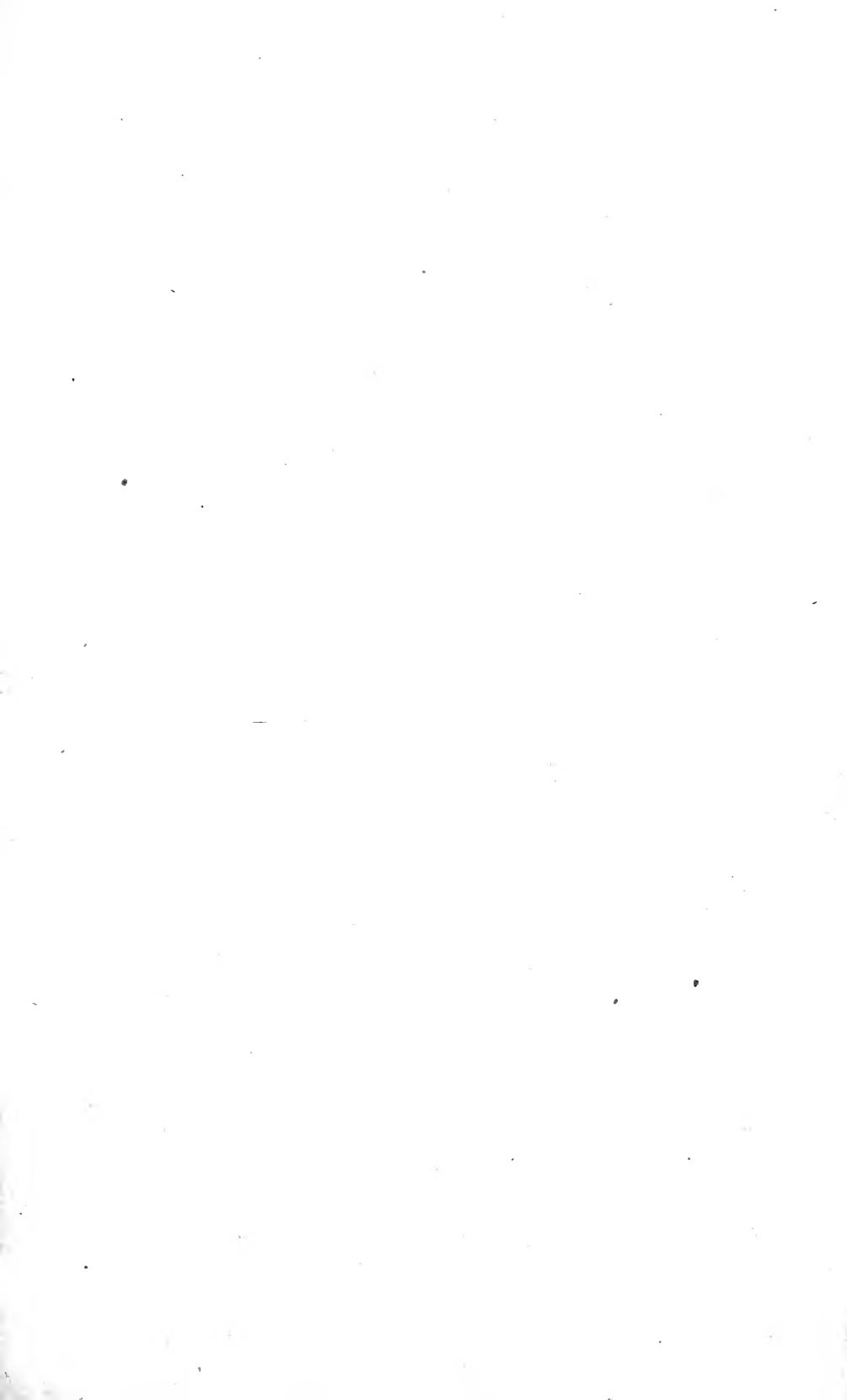
4. What does Watson say about explicit and implicit language habits? Have you observed such in your own conduct? (Watson (1).) Can you make any deductions for the study of languages after maturity, or why children (supposedly) learn languages better? Discuss Watson's statement (p. 326) “—when we study implicit bodily percesses we are studying thought;——.”

5. What is the relation of image to concept, to idea? Is it possible to 'train' the imagination? In what sense? Compare the discussion on 'training' the memory. What is the function of imagination in behavior and purposive conduct? What would be the nature of the experience of a being who had no imagination? Does the imaging of acts, particularly in motor form 'lead', ipso facto, to the act itself? What would this lead to in pedagogic theory and practice? Compare the discussion of James, Thorndike, etc. If you have never actually learned to move your ears, will an idea of such a movement lead to it? Discuss all that is involved.

References.

I. Angell (1); Breese; Colvin and Bagley; Calkins; Dunlap (1); James (2); Judd (2); Külpe; Münsterberg (1); Ogden; Pillsbury (3); Stout (2); Titchener (5); Thorndike (1) (2).

II. Brill; Galton; Münsterberg (7); Höffding; Hunter; James (1); Ladd; McDougal (1); Stout (1) (3); Titchener (1); Thorndike (3); Watson (1); Warren; Ward, J.; Yerkes.



XXI. Association

1. Are 'groups' of experiences held together somehow, somewhere? What is the structural basis and mechanism of this? That is, why and how do things arise in consciousness at the same time? How do these groups differ in size, makeup, accessibility, permanence, independence, resistance to change, etc?

2. What is the function in behavior of this type of organized experience? What would experience be like without such group systems of previous experiences? What are the connections with memory, attention, imagination, perception, sensation? What is the function of education in this connection? Of the environment? What is the meaning of character, intellect, skill, temperament, etc., here?

3. Is the problem of how associated facts are now related the same as the problem of how they came to be so related? Does it involve the same facts of human nature? Discuss in connection with each other the facts in Thorndike (3), chaps. X-XII, and the factors of recency, frequency, intensity, etc., which were discussed under memory (Topic XVIII, question 5.) Are we still dealing with the same processes? From what different points of view?

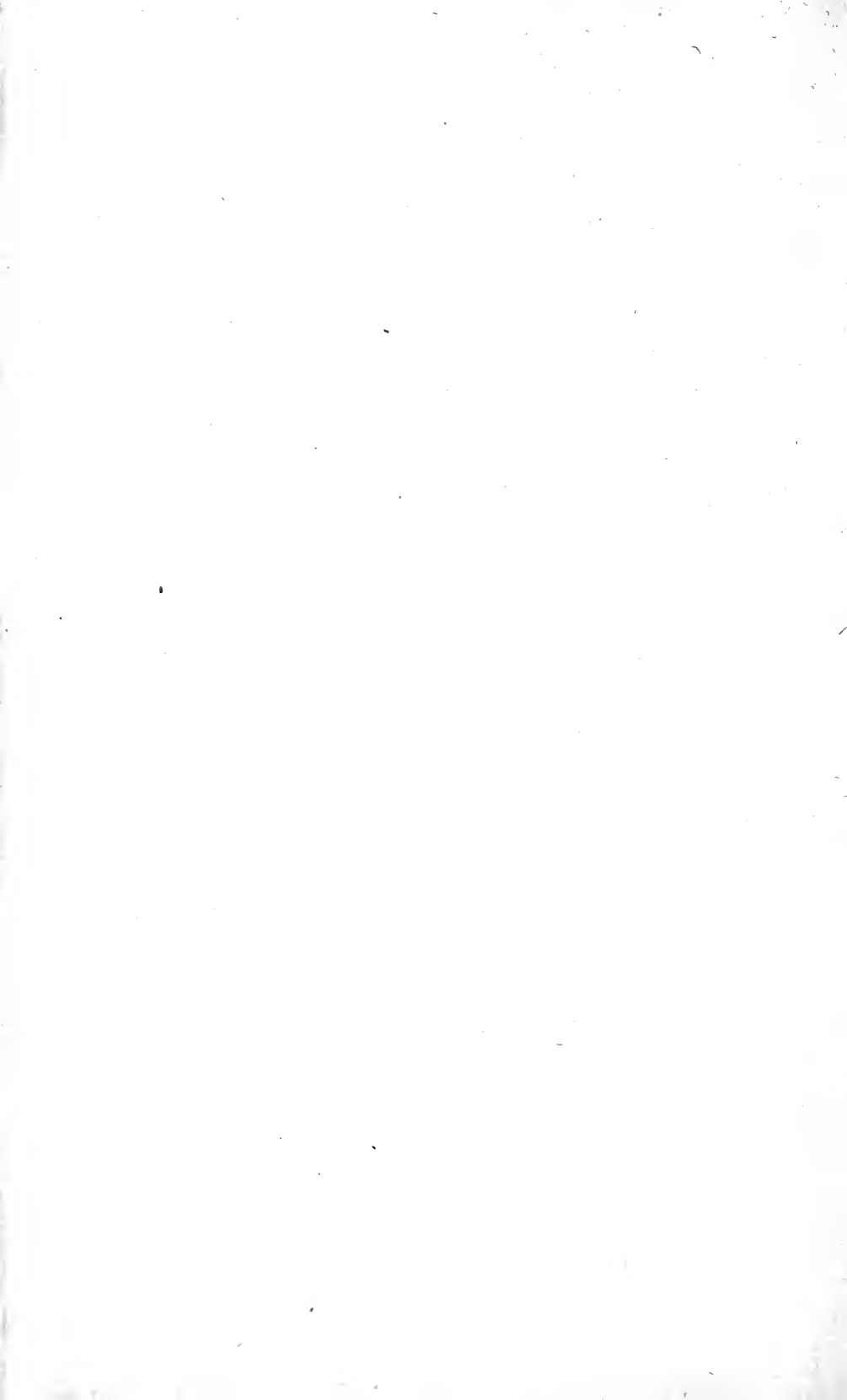
4. What different types of associations are there? Review Topic V. What have been the factors entering into the formation of the connections of question 3 of that Topic? Discuss, "Objects or events that are presented at the same time acquire an associative connection. Likewise, if one object or event follows another, the two become tied together in a more or less effective mental union." (Breese) Is this the whole explanation? What of mind-set, purpose at the time, the field of attention, etc.? Discuss the significance of contrast, cause and effect relation, similarity, etc., in this connection. Of all the factors which Breese discusses, which are the most important with a child, with an adult, with a scientist, in passive, lazy experience, in active participation in events?

5. What is the so-called Law of Contiguity? Discuss, "Objects or events which have been experienced together, will be revived together whenever any member of the group is in consciousness". (Breese) Do you find this in agreement with experience? What of similarity, etc., in the connection? Do we bring an experience to mind (consciousness) because it is similar to some other experience, or do we find that it is similar after it has come to consciousness? Discuss all that is involved. What are the phenomena of total recall, partial recall and focal recall, and their neural bases? Give examples of each.

6. What use may be made of associations in testing either an individual's mentality, or his connection with a given event? What types? What is the method of proceeding? Do you think a subject aware of the nature of such a test could evade the issue? How? Would a 'suggestible' but innocent subject be likely to incriminate himself? See Münsterberg (7). What treatment is given for hysteria and neurasthenia in this connection? What is the hypothesis involved? What is Freud's theory of the significance of dreams in this connection?

References.

Same as for Topic XX.



XXII. *Thinking; I.*

1. Is it possible to have percepts, memories, images, sensations, associations, while our behavior is comparatively 'passive'? Does this mean that the organism plays no part in such a process? Is it possible, also, to 'think' in this same sense of the word passive? What does thinking imply on the part of the organism as a whole? What does it imply in the environment, i. e., in the situation in which the organism finds itself?

2. Does the process of thinking involve all the above 'aspects' of consciousness? Do percepts plus images plus sensations, etc., equal thinking? If you are thinking, now, what else, if anything, is there in your consciousness? Is a thought a 'thing' which you 'have'?

3. The following is a simple problem in mental arithmetic. Solve it, or at least reach an answer, and make note of as much of the process as possible, what came to consciousness, what you discarded, what you kept and why, images, memories, etc., if any. "A bottle and a cork cost together \$1.10. The bottle cost \$1.00 more than the cork. How much did each cost, separately?" Did this involve reasoning? Were there any observable bodily changes or movements? Explain, so far as possible, all that you 'do' in coming to understand the significance of the following; "A tramp while walking down the street stopped to look in the window of a clothing store, where a number of figures displayed clothing of various styles and prices with tags indicating the latter hung from their necks,—such as 'This size for \$10' etc., etc. After gazing a while he walked on, remarking as he did so, "So do I."

4. What is the function of thinking in behavior? Does it appear in all behavior? Name some activities in which little or no thinking appears. Did it ever function in such matters? What would be the result of thinking about everything in our daily routine? Does this imply that we do all the thinking that is necessary or possible? What would introduce the element of thought into matters about which we now do little or no thinking? Examples.

5. What is the neural basis for thought? Is it the same as for the other processes of the preceeding papers? Is there a 'something' added to them which 'directs' their activity. Discuss again, in this connection the statement of Watson, "when we study implicit bodily processes we are studying thought; just as when we study the way a golfer stands in addressing his ball and swinging his club we are studying golf." What is the experimental evidence for this?

6. Does all thought issue in action? What kind of action? Can you 'read another's thoughts'? In what sense and under what conditions? Can you make him express his thought in action? What is the process of so doing? What is 'thinking for the sake of thinking'? Has this any outlet in conduct? What stimuli lead to thinking? Do the same stimuli lead, sometimes, to action? Examples.

References.

I. Angell (1); Breese; Colvin and Bagley; James (2); Judd (2); Pillsbury (3); Stout (2); Titchener (5); Thorndike (1) (3).

II. Galton; Münsterberg (7); Höffding; Hunter; James (1); Dewey; Ladd; McDougal (1); Stout (1) (3); Titchener (1); Thorndike (2); Watson (1); Warren; Ward, J.; Yerkes; Pillsbury (2); Binet (1); Colvin; Holt (2); Miller; Marshall (2); Sidis; White.

XXIII. *Thinking; II.*

1. Are things as they are in consciousness related to one another? Is this true of perception, attention? Are we relatively conscious of this fact of 'relation' in ordinary perception and attention? What of thinking in this connection? Discuss. "When we attend primarily to the relations between things we employ a phase of conscious activity which is thinking." Do we attend to 'relations' or to 'things' in relation?

2. Discuss from the point of view of Topic XXII, the statement; "Thinking is the manipulation of data given in sensation, perception, and imagination in such a way that the relationships existing between things are actively attended to." James writes, "A polyp would be a conceptual thinker if a feeling of 'Hollo! thingumbob again!' ever flitted through its mind." Discuss. What other elements, if any, do you consider necessary to characterize a situation as thought or thinking? Discuss; "Thinking is a purposive sequence of states of consciousness."

3. Make a list of the main points in Chapter XIII of Breese, Chapter X, Part II, of Hunter and Chapter XI of Pillsbury (3). In the light of previous discussions, which do you feel is most satisfactory? Which is nearest to the facts of experience, which seems least clear in meaning and analysis? Compare with chapters I and VI of Dewey. Why is the subject of thought so differently treated by different writers? What are the possible uses of a correct understanding of the process of thinking?

4. What is a concept; what is its relation to sensation (s), perception (s), and image (s)? Which of them have 'meaning'? Has a concept a different kind of meaning? What is the process of formation of a concept? How would you describe your consciousness when you are aware of a concept,—say, that of truth or liberty? Are you ever conscious of deliberately forming a concept?

5. What is the difference between so-called 'scientific' and 'psychologic' concepts? Between the 'general' and the 'individual' concepts? Is there an image in connection with a concept? Is it the same thing as the concept? What of the function of language and words in this connection? What is the so-called 'generic image'? What of 'intension' and 'extension' of concepts? Do these terms add anything to our understanding of concepts or their use?

6. Can we get concepts 'full grown' from other people or their experiences? What does this imply for teaching, for the language used with immature minds, for the nature of the activity which would best fit children for our civilization, for the misunderstanding of one another's language, etc.? What are the limitations and dangers in the use of concepts? What do we mean (in a psychological sense) when we say an explanation or proof is too 'theoretic', is 'way up in the air'? What are laws, customs, institutions, etc., from the point of view of psychology? In what sense are concepts 'real'; in what ways has their 'realness' been misunderstood?

References.

Same as for Topic XXII.



XXIV. *Thinking; III.*

1. Dewey, chapter VI, states that 'upon examination, each instance (of thinking) reveals, more or less clearly, five logically distinct steps:

- a—A felt difficulty;
- b—Its location and definition;
- c—Suggestion of possible solution;
- d—Development by reasoning of the bearings of the suggestion;
- e—Further observation and experiment leading to—belief or disbelief. Do you find all these in every case of thinking? Show examples, if any, where this is not true. Would you add a further step of subsequent (sooner or later) behavior or conduct in accord with the result? Are there any other elements?

2. What is judgment? Does it function in all thinking? Is it included in the steps of question 1? What function does the image play in judgment,—in the complete act of thought? Can you give an example of thought where images predominated,—where there were few or none? Under what conditions of the process of thinking do images function most?

3. What is 'mental set' in approaching or in connection with a problem or a situation requiring thought? Locate in question 1. Does a particular mental set sometimes interfere in arriving at a solution? Does it change during the process of finding a solution? Give concrete examples. What is the similarity between the random movements which an animal sometimes makes to escape from a cage and the process of 'casting about in thought' when in a felt difficulty?

4. What is the nature of the syllogism? Does it frequently function in our actual everyday thinking? Under what conditions is it most likely to be used? Is it the purpose of thought to arrange itself, as a system, in syllogisms, or to effect differences in the world of conduct? Discuss in this connection; "Any proof (of a given relationship at issue) is valid that allays doubt and secures belief in the mind of the questioner."

5. What are induction and deduction? What relation to the concept? The judgment? What is the nature of the experience(s) which leads to an induction,—a deduction? Which is primary in experience?

6. Sum up, in terms of the three sheets on thinking, the relation of thought to things, to experience, to society, to the process of education. How train to think? In what sense is this possible? What proportionate share should experiences of things and the words for them have in early schooling? What share of the 'talking' should teacher and pupil do, and why?

References.

Same as for Topic XXII.



XXV. *Affection and Feeling; I.*

1. When you are 'paying attention', when you 'have' a percept, a sensation, a memory, etc., etc., is there anything else in consciousness? Do you have an attitude toward them and how would you describe or identify this? Is it a necessary or inevitable concomitant? Has it an objective reference? Have the other things mentioned? How would you classify all these things in terms of objective and subjective? Does this really distinguish anything?

2. With reference to what or whom is this affective element? When does this affection become feeling? Does affection accompany all sensory and ideational processes? Discuss: "Affection is a unique and elementary content of consciousness always accompanying some cognitive process and never existing alone."

3. Can you analyse this element of affection in the same way as sensation and find qualities in it? How many? Discuss the differences of Wundt (1) and Titchener (1) in this matter? Is there such a thing as neutral affective consciousness? Can you apply the Q-I-E-D of sensation here? Is affection merely another characteristic of sensation? Recall the discussion on this point. Is affection merely a second sensation accompanying a given sensation? Give what arguments you can find from experience in this matter. What of the theory that affection is a 'relation' or 'an obscure kind of knowledge'?

4. Is the pleasant affective tone subsequent to a good dinner the same as that realized by reading a good book, by seeing a good play? What are the implications of either answer to this? Is excitement an affective state of consciousness? (See Wundt) Is it pleasant or unpleasant? What conclusions? Do we adapt to pleasant and unpleasant experiences? Discuss affection in connection with the functioning of the several senses. What conclusions may be drawn? Consider the relation of the intensity of sensation and the intensity of affection accompanying it, the duration of each, the quality of each, etc. Is pain the same thing as unpleasant affective consciousness?

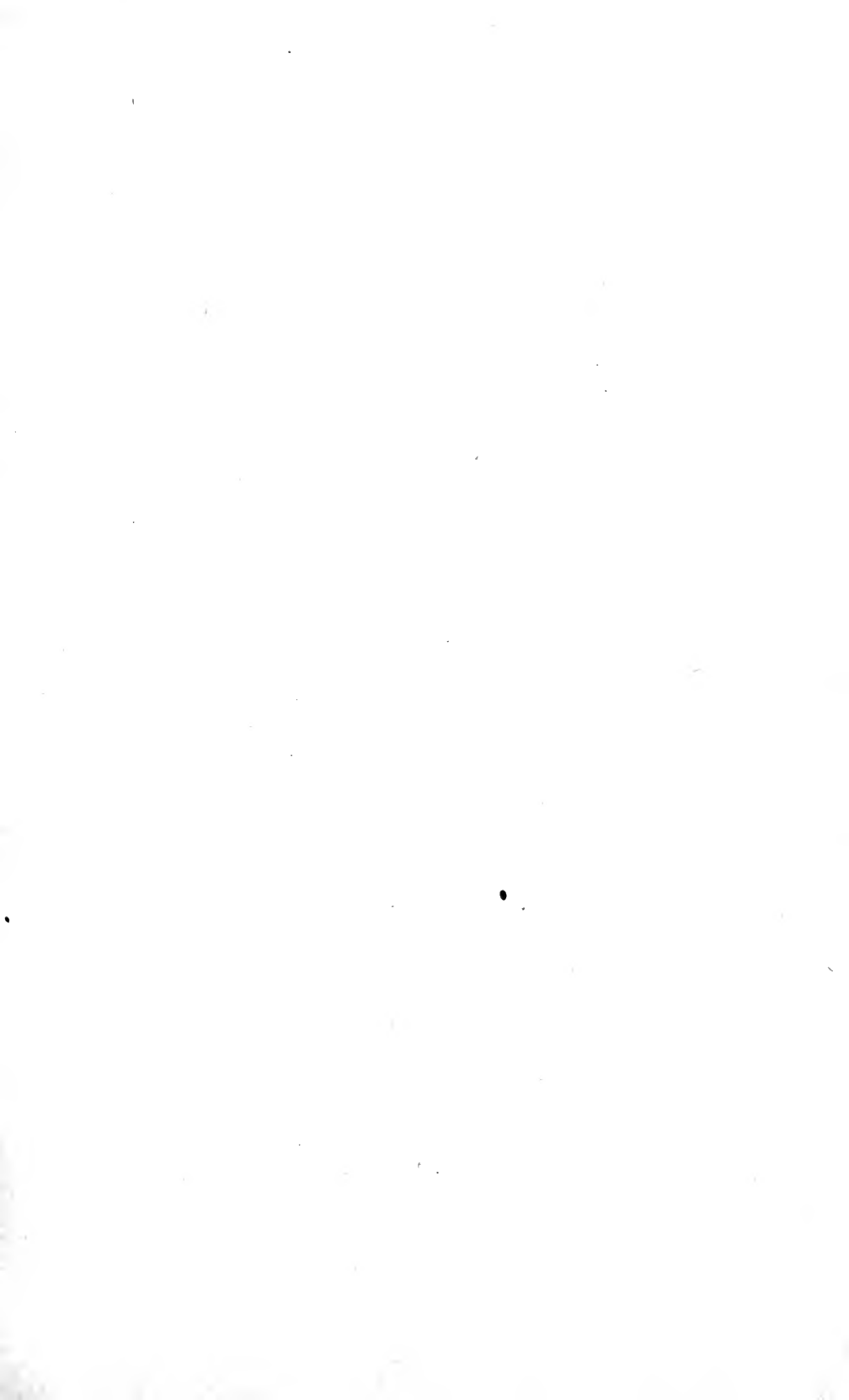
5. Can there be a mixed affective consciousness? What happens when a percept includes several sensations some of which are pleasantly affective in tone, and some the reverse? Discuss the same question with reference to memories, and thinking. Does the same affective consciousness recur that originally accompanied the experience which is being recalled? What has our momentary purpose to do with tone? Can you recall or image previous affective states?

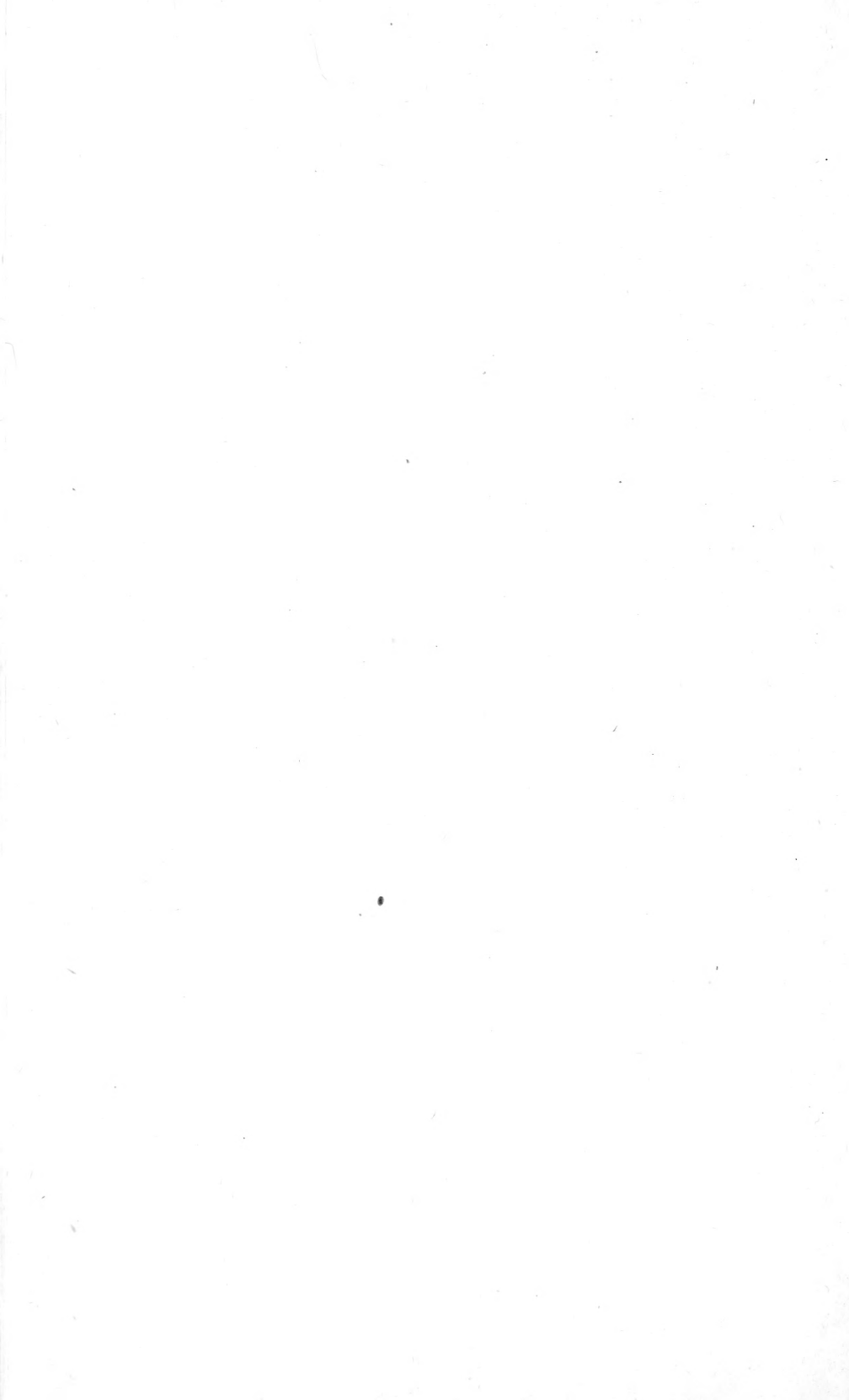
6. What bodily accompaniments of affective states are there? What have been the experiments and results in this field? What about facial expression? (See Darwin.) What has been the function of these things? For the individual,—for the group?

References.

I. Breese; Angell (1); Colvin and Bagley; Thorndike (1) (3); James (); Pillsbury (3); Stout (); Titchener (5); Judd (2); McDougal (1); Hunter; Warren.

II. Cannon; Crile; Darwin; Ribot (2); Ross; Sidis; Trotter; Russell (2); Titchener (1) (2); White; Watson (1); Wallas (1); Ward, L. F.; McDougal (2); James (1); Thorndike (2) (3) (5); Wundt (1); Ward, J.





XXVI. *Affection and Feeling; II.*

1. What is the probable neural basis for the affective qualities of pleasantness and unpleasantness? What are 'original satisfiers and annoyers' in this connection? Compare the whole treatment in Thorndike (3), chapter IV, with that of Breese and Watson. Discuss; "Pleasantness goes with facilitation and unpleasantness with inhibition of neural activity" (Breese). "States of pleasure are connected with an increase, and states of pain with an abatement, of some or all of the vital functions" (Bain).

2. What of Titchener's theory of free nerve endings in connection with affection. Discuss his statement: "... the affections appear—not exactly as undeveloped sensations—but at any rate as mental processes of the same general kind as sensations, and as mental processes that might in more favorable circumstances have developed into sensations." What are the 'nutritive', the 'energy' and the 'action' theories of affection?

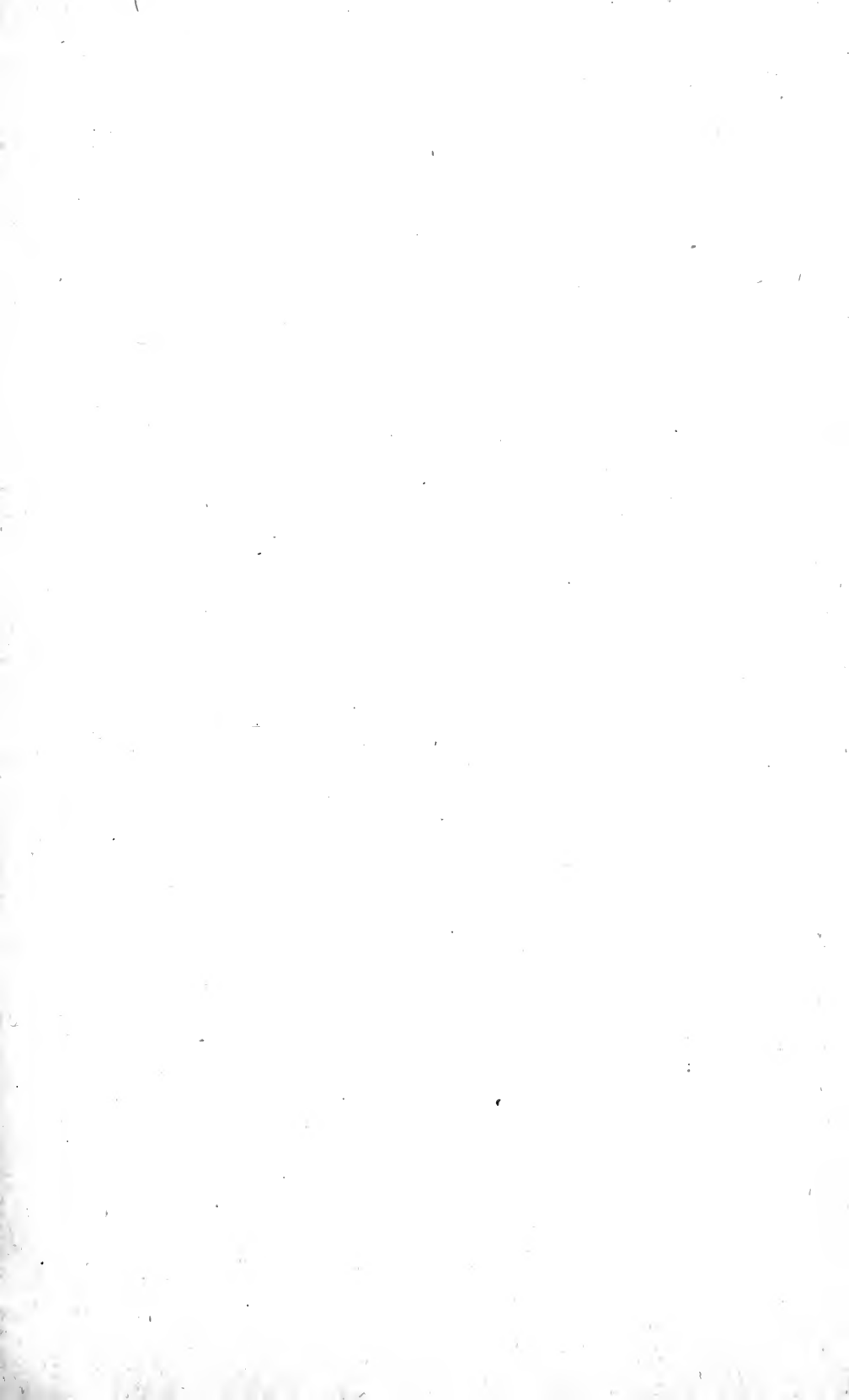
3. What is the function of the affective process? Discuss: "In the main whatever is immediately beneficial is agreeable and whatever is immediately harmful is disagreeable." If this is true, how might it have come about in the evolution of life? Is this statement true with reference to the majority of the activities of your everyday life?

4. Recall from question 2 of the preceding paper the distinction you made between affection and feeling. Can you have 'feeling' in connection with images, memories, ideals, as well as with sensations? Give examples. What is the usual distinction between pure and mixed feelings, and simple and complex? Have we the same two kinds of feelings as affective processes, i. e., pleasant and unpleasant? Do the varieties of the previous sentence involve, at bottom, only these? What of the so-called ethical, social, religious, sensuous, intellectual and aesthetic feelings? Can you reduce all of these to some phase of consciousness plus either pleasantness or the reverse? What of the feelings of doubt and certainty? Discuss.

5. What is a 'mood', and how is it related to feeling and affection? What is its frequent cause, its neural basis, its bodily accompaniments? What is the relation, if any, of mood and 'temperament'? Discuss as for mood, and criticise the theory of the four 'types' of temperament. What facts of psychology and experience go to contradict this classification? What is Wundt's description of these types? What is a 'sentiment'? Has it more of an intellectual content than any of the other terms of this question? What is the relation of all these elements of consciousness to the larger term,—emotion? Frame a tentative definition of emotion from the above consideration. Does emotion involve sensation (s), affective elements, ideas?

References

Same as for Topic XXV.



XXVII. *The Emotions; I.*

1. Discuss: "Probably the most impelling and self-asserting mental state . . . is emotion. For good or ill it makes the greatest disturbance in the course of mental events" (Pillsbury) (3). "Emotion . . . is a highly complicated and diffused reaction of the whole conscious organism in which many cognitive and affective elements are fused together" (Breese). "An emotion is an hereditary 'pattern-reaction' involving profound changes of the bodily mechanism as a whole, but particularly of the visceral and glandular systems" (Watson) (1).

2. What proportion to the whole emotion do the bodily changes of the last quotation bear? Is there anything else in addition? Discuss: "If we fancy some strong emotion, and then try to abstract from our consciousness of it all the feelings of the bodily symptoms, we find we have nothing left behind, no 'mind-stuff' out of which the emotion can be constituted, and that a cold and neutral state of intellectual perception is all that remains" (James).

3. What is the James-Lange theory of the emotions, in detail? What role does perception play in it? On this basis what part would affection play? Can we have emotions without these bodily disturbances; the disturbances without the emotions? What physical experiments have been carried out; what body of evidence gathered from the stage, etc.? What are the conclusions? Does the same emotion always have the same bodily accompaniments, and what may be concluded from this?

4. What is the apparent function of emotion? Does it always facilitate adaptive behavior? Is it ever a hindrance? Has the environment of present human experience any significance here? Does an emotion ever 'react' in an entirely different situation than that in which it was aroused? Does society inhibit the expression of emotions? All? What emotions are most frequently used in social or pseudo-social situations?

5. What are, specifically, the human emotions? (See McDougal (2) and Thorndike (2) (3), in particular). What are the situations which call each out, and what are the specific reactions for each? More than one reaction? More than one emotion called out by the same situation? What are the instincts and the instinctive tendencies in this connection? Has every instinct an accompanying emotion?

6. What do Darwin and Spencer say of the facial expressions in connection with instincts and emotions? Have they had any service in primitive or animal behavior? Have they any function at present? What is Wundt's theory? Thorndike's?

References

Same as for Topic XXV.

XXVIII. The Emotions; II.

1. What classifications of the emotions have been proposed? Consult Baldwin, Wundt, Titchener, Thorndike, and Warren, in particular. Can you suggest other bases of classification? What is Watson's (1) attitude?

2. In remembering an experience which was highly colored with emotion, is the memory also tinged with emotion? With the same emotion? Would this add another type of memory to the groups discussed under that topic? Does this mean that images of an emotion exist, or that an actual emotion, like the original is experienced? What would be the neural or structural basis of this?

3. What are the simple emotions? (Compare question 1). Do complex emotions exist? What would the following be compounded of: Contempt, scorn, loathing, fascination, etc.? (See McDougal).

4. What is the aesthetic emotion? (See Topic XXVI, question 4.) What is empathy? Discuss: "Pleasure thought of as a quality of an object leads us to call it beautiful." Why is a satisfying full meal not called beautiful, while a rose is? Is it a matter of culture, tradition, etc.? Discuss. What is technique in this connection? Is there such a thing as a beautiful taste, smell or touch? Discuss

5. In the light of questions 1 and 4 of Topic XXVII, sum up, roughly, the directive force and proportionate functioning of thought and emotion. What significance for the school? What application to the problems of labor? What is the theory and what the results of Tead in his investigation of instinct in relation to industry? What is the attitude of Trotter? Do these considerations belong to the psychological study of emotion?

6. Is it possible to study the mechanism of the emotions in the same way as that of sensations, perceptions, etc.? What are Watson's suggestions for a method of study? Is it a fact that we are, in general, less aware of the emotional status of our associates than of their intellectual abilities? Why? How would you determine norms or standards of sensitivity, variability, quality or type, etc.? Are emotional reactions determined primarily by environment or heredity? What can be accomplished in the modification of emotional reactions by reshaping the environment?

7. What is the technique of the 'controlled association word reaction'? The 'free association method'? What do these reveal, and what use may be made of the results? Discuss Freud's theory of the significance of slips, errors in speech, bodily posture, useless habits (biting nails, etc.), dreams, etc. What other methods of investigating emotions or emotional responses? (See Watson (1), in particular.)

References

Same as for Topic XXV. See also Tead; Trotter; Brill; Freud (1) (2); White.

XXIX. *Types of Behavior*

1. Discuss: "From its very first appearance in the life process, consciousness has been connected with the motor responses. In fact its fundamental function has been to guide behavior" (Breese). Compare Topics I-V.

2. What native forms of behavior are there, what is their relation to other forms, and what modifications are they subject to? Are they necessarily or always accompanied by consciousness? How do the acquired forms of behavior contrast in their frequency, complexity, susceptibility to modification, usefulness, the situations which call them out, etc., etc.? (See Woodworth, in particular.) How do native and acquired forms of behavior merge into a given reaction?

3. Distinguish, and give examples of the following: purely physiological reactions, unco-ordinated random reactions (?), native reflexes, instincts, acquired reflexes, habits, ideo-motor reactions, volitional reactions. Show the relation of previous experience (if any) to each, its function, its probable neural basis, typical situations embodying them, their modifiability, etc. Are any of them compounds of others?

4. What can you say of purpose in relation to the terms of question 3? In what different senses of the word? Does co-ordination imply purpose? What has been the origin or process of development of the reflexes and instincts? Does consciousness imply purpose?

5. What are the specific instincts in man? How do they compare in number and complexity, as well as servability with those of animals? What does this imply? With what may instincts be most readily confused? What is the order of appearance of the various instincts? Any variation? (See Thorndike (2) (3), in particular.) Are instincts ineradicable? What of their functioning in the complex social life of man? What experimental work has been done in connection with the instincts? Discuss, again, the emotions in this connection, the school. See Topic XXVIII.

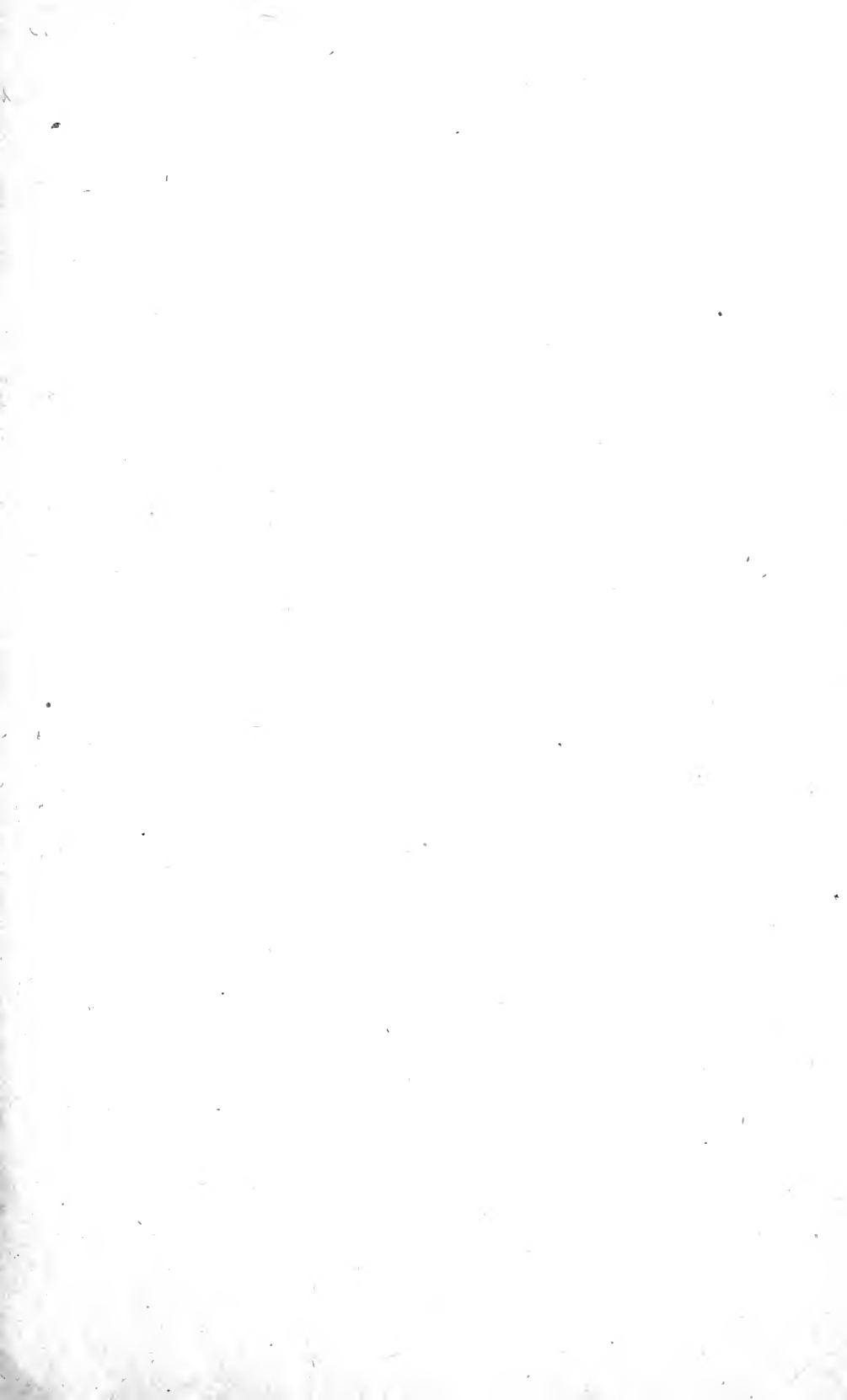
6. Discuss: "Volitional action is (therefore) a transitional stage of activity. It is really not acquired action, but action in the stage of being acquired" (Breese). What of consciousness in this connection? Purpose? The contents of consciousness? Can you never do a volitional act which you have often done before? Discuss all that is involved.

7. What is the function of images, memories, perceptions, sensations, etc., in a volition? In the instance of images, will a mere image or idea of what it is desired to do, result in the appropriate movement or reaction? Discuss: "... An idea does not tend to produce the act which it is an idea of, but only that which it connects with as a result of the laws of instinct, exercise and effect" (Thorndike). Compare also the trial and error method of bringing about results. What part, if any, does an idea of the necessary act play in such a method? Is there any volition in it?

References

I. Breese; Angell (1); Colvin and Bagley; Thorndike (1) (3); James (2); Pillsbury (3); Stout (2); Titchener (5); Judd (2); McDougal (1); Hunter; Warren; Watson (1).

II. Hobhouse (1) (2); Holt (1) (2); Haldane; Jennings; Loeb (2) (3); Morgan (1) (2) (3) (4); Trotter; Tead; White, Woodworth; Thorndike (2); Stout (1) (3); Ward, J.; James (1); Titchener (1) (2); Wundt (1).



XXX. *The Will*

1. Have we or do we experience a 'will' in the same sense as sensations, perceptions, images, memories, emotions? Is there a 'something', an entity, which steps in when everything is ready and 'starts it off', or 'lets it go'? If you find evidence for such, describe the experience. What portion of the total activity of the organism is represented by memories, sensations, perceptions, etc.? Do they, at any one moment, represent all that the organism is doing? Always?

2. Does the element of choice, decision, effort, consent or deliberation enter in to what is called will? Do these elements always involve will? Is will involved in deciding whether a given perception is an illusion or not, in deciding to have coffee rather than tea for breakfast, in choosing to remain in bed rather than get up?

3. Discuss: "By the impulsive quality of a mental state is meant (they say), not any peculiar aspect of it as felt, but only its quality of being connected directly with an act." "The special psychology of the will is chiefly not a descriptive account of the feelings connected with conduct, but an account of capacities for and habits of action and of the connections between thoughts and acts" (Thorndike (1), which see).

4. Do all states of consciousness lead ultimately to action, either internal or observable to an outsider? What of Watson's treatment of this point? Does this imply 'will' in everything? Discuss: "Every state of consciousness tends to culminate in motor activity. This motor activity manifests itself in reflexes, instincts, ideo-motor movements, habits, and volitional reactions" (Breese). See Topic XXIX. Give examples.

5. What is the function of thought in connection with will? What does the consideration of several possible modes of conduct, and the final performance of one of them, imply, in this connection? Does this mean that past knowledge and experiences are the basis for present behavior? Discuss.

6. What is the relation of will to mood, motives, temperament, character, the 'self'? What is the self in this connection? Discuss. Is our 'will' a blend of our interests, desires, ideals, etc.? Whence came these elements? What is the problem of the freedom of the will? Is it primarily a psychological question, and what light can the study throw upon it? What experimental work has been done in this connection? What of the material of Topics I-V?

7. What would be a satisfactory meaning or interpretation of 'training the will'? What would be a 'socialized will'? What can the school do in both these connections? In what sense, if any, can the 'will' of someone else be imposed upon you? What are the methods in which suggestion, argument, persuasion, etc., bring about desired reactions? Examples. Which should the school use?

References

Same as for Topic XXIX.

XXXI. *The Self*

1. Describe what would be meant by the phrase: 'The self is the psycho-physical organism at work'. Does this make clear the meaning of the word 'self'? In what sense may the words, 'unity, continuity and identity' be used of the self? Does this imply a something called a self, independent of and apart from the various aspects and states of consciousness which have been considered? Does this mean that the self is equal to sensations plus perceptions plus ideas plus emotions, etc., etc.? What else, if anything, is there?

2. Discuss the phrases: "The mind is a dynamic unity." "The self is a developing entity." "The I in man is the expression of the co-working of the processes and impulses of the brain." Have we more than one self? What is the relation between them and the physical organism? Explain, psychologically, 'I do not like myself'. What is the selective agency in the environment which calls forth one or the other to action? What is the so-called 'subject self', the 'empirical self', and their relation?

3. What is presumably the origin and the process of growth of the self? Have animals selves? In the same sense? Does a self imply consciousness? Do children have a self before they are conscious of it? Purpose? 'Will'? What are some of the main differences between the self at five months, five years and fifty years? What is temperament, mood, etc., in this connection? What is the comparative influence of the different factors which co-operate to make and form the self (or selves)? What limits are there to the field of expansion of the self?

4. Discuss, in some detail, the function of sensation as an element in forming the self. What is added by the process of perception, memory, images, emotions, thinking, volitional states, attention, affective consciousness, etc.?

5. Is sleep an absolute break in the existence and the functioning of the self (selves)? How does the self come to begin its functioning where it left off the previous night? Is the environment the cause? Would a new environment on awakening mean a new self? What of the neural bases of conduct? What is the nature of dreams in this connection and the explanation of their particular forms and contents? What do they show of the nature of the self, or the existence of more than one self?

6. What are the more serious disturbances of the self, their apparent causes, and the process of reorganization? Do such phenomena occur in normal life for a shorter period and with less dramatic results? Illustrate. What of automatic writing, somnambulism, hypnosis, 'nervous breakdowns', double personality, insanity, etc., in this connection?

7. What experimental results have been obtained in connection with the self? What are Watson's suggestions for investigation? Discuss his analogy of the gas engine as a valid representation of self.

References

I. Freud (1) (2); Münsterberg (3); Preyer; White; Breese; Warren; Watson (1).

II. Adler; Baldwin (3); Binet (2); Barr; Binet and Simon (1); Brill; Burr; Hart; Jung; Leary; Trotter; Titchener (1) (2); Woodworth.

XXXII. *Some General Considerations*

1. From the point of view of the Topic on the Self (XXXI), frame a definition of psychology. Discuss some definitions you have met with in your reading.

2. Do you judge that the majority of texts which you have consulted have sufficiently stressed the physiological side of psychology? Of how great importance do you judge this aspect of the study to be?

3. Classify some twenty or thirty of the references which you have used most frequently into three groups, Watson representing one type, Ward, J., another, and Breese a third. In what particular divisions of the subject do you find the greatest differences? What one single book would you choose, and why?

4. Along what lines does the science seem to be developing most? What signs of opposition are there? What is your own opinion about the most satisfactory method for psychology? Was this embodied in your definition? Do you think that a laboratory is necessary for the study of psychology? For all psychology, or for what portions?

5. What do you think of the relations, at present, of psychology to the practical arts, to industry, to employment, etc.? What would you suggest in this connection?

6. How do you compare the actual results of psychology with those of some physical science,—in exactness, in objectivity, etc.? What improvement could possibly be made here, and how would you endeavor to bring it about?

7. Do you think that the study of psychology is of any value in individual experience; in the associated life of society; in the teaching of children; in the training of teachers? Give examples of such value in concrete cases.

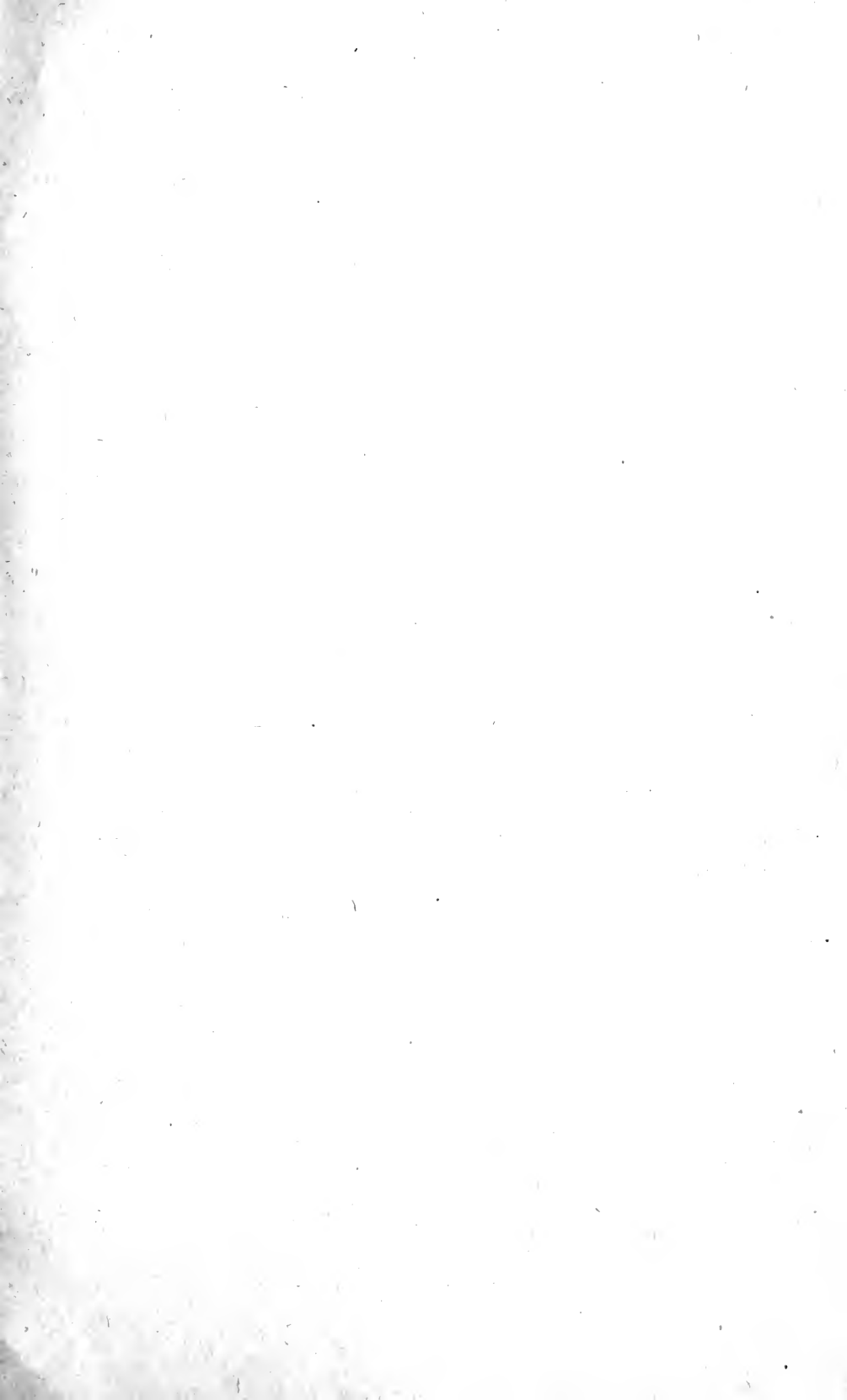
8. Would such knowledge merely add to the pleasures and conveniences of life? What additional changes might it bring about? What evidence have we that this would be true?

9. What are some of the more important problems at present under the consideration of psychologists? What methods are they using in each particular case of which you have knowledge? What are the bearings of the problems and their solutions?

10. How would you approach the psychological study of such subjects as art or religion? Is it likely that only a psychological study of the facts and their history would reveal the real nature of such activities? What has been the method of approach to these studies? What other fields of activity have been or could be profitably studied from the psychological point of view?

11. From a psychological point of view how would you explain an advance in the general nature of human life? Has the individual improved? What are the implications of your conclusions?









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